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MANUAL

OF THE

MOTOR TRANSPORT CORPS

Prepared under the direction
of the Director Motor
Transport Corps

(FOR OFFICIAL CIRCULATION ONLY)

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MANUAL

OF THE

MOTOR TRANSPORT CORPS

American Expeditionary Forces
Headquarters, Services of Supply
Office of Director, Motor Transport Corps
October, 1918.

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WASHINGTON : GOVERNMENT PRINTING OFFICE : 1920

INTRODUCTION

The following Manual of the Motor Transport Corps supplants the booklet "Notes on Motor Transportation" published in June, 1918, and is published for the information and guidance of all oranizations under the jurisdiction of the Director Motor Transport Corps, American E. F.

Changes in this manual will be published from time to time in bulletin form, until such time as it may become desirable to issue a new edition. Criticisms and suggestions are solicited, and should be sent to the Director Motor Transport Corps at the earliest possible date.

M. L. WALKER,
Brigadier-General, U. S. A.

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MANUAL OF THE MOTOR TRANSPORT CORPS.

WAR DEPARTMENT,
WASHINGTON, *December 19, 1919.*

The Manual of the Motor Transport Corps, A. E. F., is issued, until further instructions, for the information and guidance of all concerned, except in those cases where it has been amended by existing orders, as shown in "Orders and Instructions Relating to Motor Transport," a tabulation of which follows:

Orders and instructions relating to motor transport.

Description.	Date.	Subject.	Effect on motor transport.
G. O. 89, W. D.....	2 Oct., 1918	Standardization of motorcycles in United States not to conflict with oversea requirements.	Supplements G. O. 75, W. D., 1918.
Sec. IV, G. O. 91, W. D.	8 Oct., 1918	Registration and marking of vehicles.	Supplements same material in manual.
Sec. V, Bul. 49, W. D...	27 Aug., 1918	Allowance of transportation for camps, fields, and posts.	War allowance no longer in effect.
G. O. 30, W. D.....	27 Feb., 1919	Control of motor vehicles.....	Interpretation of G. O. 75, W. D., 1918.
G. O. 31, W. D.....	28 Feb., 1919	Hire of motor transportation..	Supplements G. O. 75, W. D., 1918.
G. O. 54, W. D.....	21 Apr., 1919	Consolidates all transportation, personnel, records, and equipment except motor transport.	Continuous separation of motor transport from other forms of transportation as first laid down in G. O. 74, G. H. Q., A. E. F., 11 May, 1918.
Sec. III, G. O. 63, W. D.	12 May, 1919	Motor transport general depots.	Abolishes motor transport districts.
Sec. II, G. O. 84, W. D..	1 July, 1919	Use of motor vehicles.....	Amends manual and other existing instructions on use of motor vehicles.
Sec. V, G. O. 91, W. D..	19 July, 1919	Table of organization for Regular Army units.	Reduces war strength of organizations.
Sec. V, G. O. 99, W. D..	7 Aug., 1919	Speed limits for motor vehicles.	Amends existing limits.
Do.....	5 Sept., 1919	Use of motor vehicles.....	Amends Sec. II, G. O. 84, W. D., 1919.
Sec. IV, Bul. 16, W. D..	30 Apr., 1919	Lowering tops of vehicles.....	Prohibits practice.
Bul. 23, W. D.....	19 July, 1919	Army appropriation act.....	M. T. C. and certain other special organizations of Army continued to June 30, 1920.
Sec. I, Bul. 29, W. D....	27 Aug., 1919	Purchase of automobile accessories from motor transport general depots.	Authorizes officers, enlisted men, field clerks, and members of Army Nurse Corps to purchase accessories.
Bul. 30, W. D.....	6 Sept., 1919	Detail of N. C. O.'s and other enlisted men at educational institutions.	Prescribes 30 enlisted men of M. T. C. for this duty.
Cir. 524, W. D.....	24 Nov., 1919	Restriction on auction sale of Government-owned automobiles.	All officials and employees of War Department, all officers, enlisted men and civilian employees excluded from bidding.
Supply Cir. 29.....	8 Apr., 1919	Transfer of the storage and distribution functions of the Ordnance Department.	Transfers equipment of repair trucks and similar trucks to P. S. and T.
Purchase and storage notice 160.	26 May, 1919	Duties of M. T. C. officers on staff of zone supply officers.	Prescribes duties of a special class of officers.
M. T. C. Cir. 1.....	2 Jan., 1919	Instructions for cold weather caretaking.	Supplements manual with instructions for use of anti-freezing mixture.
M. T. C. office order 17..	12 Apr., 1919	Organization of office of C., M. T. C.	Amends par. 33 of manual.

[062.11, A. G. O.]

BY ORDER OF THE SECRETARY OF WAR:

PEYTON C. MARCH,
General, Chief of Staff.

OFFICIAL:
P. C. HARRIS,
The Adjutant General

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WASHINGTON : GOVERNMENT PRINTING OFFICE : 1920

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Changes in this manual will be published from time to time in bulletin form, until such time as it may become desirable to issue a new edition. Criticisms and suggestions are solicited, and should be sent to the Director Motor Transport Corps at the earliest possible date.

M. L. WALKER,
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CHAPTER I

THE MOTOR TRANSPORT CORPS

The Motor Transport Corps is organized under the following general orders:

GENERAL ORDER
No. 75, W. D.

August 15, 1918.

1. There is created during the existing emergency, a Motor Transport Corps.

2. There will be detailed a Chief of the Motor Transport Corps.

3. In this order, unless special exceptions are made, the term "motor vehicles" will be construed to include all bicycles, motorcycles, automobiles, trailers and trucks, by whatsoever staff corps or service they may have been originally supplied and for whatsoever purpose. All motor vehicles with cargo-carrying chassis are classed as trucks. Tractors of the caterpillar type, designed primarily for traction purposes and tanks, are excepted from the provisions of this order, the Ordnance Department being charged with the responsibility for their supply and maintenance.

4. The functions of the Motor Transport Corps are as follows:

(*a*) The technical supervision of all motor vehicles.

(*b*) The design, production, procurement, reception, storage, maintenance and replacement of all motor vehicles, and accounting for same.

(*c*) The design, production, procurement, storage and supply of spare and repair parts, tools, accessories and supplies of all motor vehicles, and accounting for same.

(*d*) The establishment and operation of all Motor Transport Corps garages, parks, depots and repair shops.

(*e*) The procurement, organization and technical training of Motor Transport Corps personnel.

(*f*) The salvage and evacuation of damaged motor vehicles.

(*g*) The homogeneous grouping of motor vehicles.

(*h*) The operation, in accordance with instruction from the proper commanding officer as to their employment, of groups of motor vehicles of "First Class" as defined in paragraph 5 below.

(*i*) The preparation of plans for hauling cargo and personnel over military roads, or roads under military control will be under the control of the Motor Transport Corps.

(*j*) The procurement, supply, replacement and preliminary training before assignment to combatant organizations, of personnel for operation of motor vehicles of the Second Class, will be made by the Motor Transport Corps.

5. With respect to the control exercised over them by the Motor Transport Corps, motor vehicles are grouped into two classes, viz:

First Class.—Those the operation of which the Motor Transport Corps controls in the United States and overseas, and for the efficient functioning of which as transportation units it is directly responsible.

Second Class.—Those over which the Motor Transport Corps exercises merely technical supervision in the United States and overseas.

The First Class includes all cargo-carrying or passenger-carrying motor vehicles used for general transportation purposes and the motorized portion of such reserve trains as may be held for general transportation purposes in rear of an army, under control of the army commander.

The Second Class includes all motor vehicles not included in the First Class. Substantially these will be such motor vehicles as are assigned by Tables of Organizations to organizations such as divisions, corps, troops and army troops.

The Motor Transport Corps controls the operations of First Class vehicles, but merely maintains a technical supervision over the operation of Second Class vehicles. This technical supervision will, however, be interpreted very broadly by all concerned. Bulletins will be published from time to time concerning the proper method of operation, care and maintenance of motor vehicles. Motor Transport Corps Officers will keep themselves constantly informed as to how motor vehicles of the organization to which they are attached are being used and will report to the proper commanding officer any abuses which they discover. The commanding officers to whom such reports are made will hold to strict responsibility any officers who have motor vehicles under their control which have been in any way damaged or injured on account of disregard of the proper methods of operation, care and maintenance laid down by such bulletins.

When vehicles are placed in the Second Class, the Motor Transport Corps officer supervising them has no authority to determine the use to which they are put; he merely guarantees that they shall perform as efficiently as possible whatever work the commanding officer chooses to assign to them.

When vehicles are placed in the Second Class, the commanding officer of the unit to which they are allotted is directly responsible for their efficient functioning, to the same degree as is the Motor Transport Corps officer for vehicles in the First Class.

6. All garages, parks, depots, repair shops and similar establishments of the Motor Transport Corps will be manned and operated by Motor Transport Corps personnel, and their commanding officers will report direct to the Motor Transport Corps officer on the staff of the unit or of the organization to which they are attached. Any such establishments which may now be in existence are hereby placed under the control of the Motor Transport Corps in the manner stated above.

7. Motor vehicles and their spare parts, motor vehicle shops and shop equipment, tools and accessories purchased by other staff corps or services will be turned over to and invoiced to the Motor Transport Corps and assigned by the Motor Transport Corps in accordance with the Tables of Organization, and as the best interests of the service dictate, regardless of their original source of procurement; except that ambulances and non-cargo and non-personnel carrying motor vehicles such as mobile repair shops, especially designed for Ordnance, Signal Corps and Engineer Corps, gun mounts, rolling kitchens, laboratory trucks, wireless trucks, photographic trucks, searchlight trucks, water sprinklers, will be held by the Motor Transport Corps subject to the orders of the staff corps or service for which they have been purchased.

In the case of such ambulance and non-cargo carrying vehicles, the Motor Transport Corps will provide parking facilities for their reception and furnish facilities for the maintenance of the chassis and of such other parts as may be arranged for between the Motor Transport Corps and the other staff corps or service concerned. Property accounting for all motor vehicles and for chassis of special vehicles above mentioned will be made to the Chief of Motor Transport Corps.

8. All questions which may hereafter arise affecting the design or construction of motor vehicles procured by or for any staff corps or service, insofar as concerns the chassis or any element with the supply or maintenance of which the Motor Transport Corps is concerned, will be decided by approved recommendation of the Motor Transport Board, appointed by Special Order No. 91, War Department, 1913, with a view of securing standardization of design and type and of facilitating repair and replacement.

9. The chief of each staff department now purchasing or operating motor vehicles will submit on or before August 31, 1918, a list of all personnel and organizations which are performing Motor Transport duty under provisions of Paragraphs 4 and 5 preceding. He will submit with the list the names of technical personnel which he desires to retain for use under provisions of Paragraph 7 preceding. All personnel and organization except that approved to be retained, will be transferred to the Motor Transport Corps on August 31, 1918.

10. In each army, corps and division, the army artillery, and in each organization and station, there will be an officer of the Motor Transport Corps or an offi-

cer as acting Motor Transport Corps officer, designated Motor Transport Corps officer of that command, who is responsible for the efficient operation of the Motor Transport Corps within the limits of the command. His activities are controlled by G-1 in division or corps, and by G-4 in armies, in the same manner as are those of other representatives of technical and supply services in such commands. The functions of this officer are as follows:

First, he is in command of all motor transportation of the First Class, as defined above, and controls its operation as specified in Paragraph 4-(h) above. He is also in command of all Motor Transport Corps maintenance and supply agencies on duty with the command.

Second, he exercises the functions of a staff officer as regards the supply of all Motor Transport Corps property for the command and as regards the technical supervision over motor vehicles of the Second Class provided for in Paragraph 5 above.

To carry out this technical supervision, it will be his duty to make frequent inspections of all matters having any bearing on the motor transportation of the command. In making these inspections, he will be accorded every facility by all concerned. He will make frequent reports to the Divisions of the General Staff by whom his activities are controlled, covering such matters as the suitability of the personnel charged with operating motor vehicles, the mechanical condition of the vehicles, the conditions under which they are operated, needs for repair or overhaul, carelessness or waste on the part of any individual organization and similar matters, together with his recommendation as to any action that should be taken.

11. The chief of each department will submit on or before August 31, 1918, a list of funds appropriated for the design, purchase, equipment, repair and maintenance of motor vehicles as defined under Paragraph 3, preceding. This list will show unexpended balances. The chief of each department will also submit the amount estimated and desired to be retained for purchase of special designs defined in Paragraph 7, preceding. All unexpended balances of above appropriations will be transferred to the Disbursing Officer, Motor Transport Corps.

12. All existing contracts for motor vehicles, motor vehicle equipment and supplies, maintaining, operating and repairing motor vehicles, will be taken over by the Chief of the Motor Transport Corps, who will also make all future purchases and disbursements.

*13. Section H, General Orders, No. 38, War Department, 1918, is rescinded. G. O. No. 74, H. A. E. F., May 11, 1918, as amended by G. O. 114, H. A. E. F., July 11, 1918.

14. General Order No. 70, H. A. E. F., Dec. 8, 1917, being inoperative by reason of the publication of G. O. No. 31, H. A. E. F., Feb. 16, 1918, is hereby revoked, and the Motor Transport Service, created by that order, will be operated under the rules and regulations set forth herein.

15. The M. T. C. is under the immediate direction of the Director, Motor Transport Corps, and is a part of the S. O. S.

16. In this order, unless special exceptions are made, the term "motor vehicle" will be construed to include all bicycles, motorcycles, automobiles, trailers and trucks, by whatsoever staff corps or service they may have been originally supplied and for whatsoever purpose. All motor vehicles with cargo-carrying chassis are classed as trucks. Tractors of a type designed primarily for traction purposes and tanks are excepted from the provisions of this order, the Ordnance Department being charged with the responsibility for their supply and maintenance.

17. The functions of the M. T. C. are as follows:

(*a*) The technical supervision of all motor vehicles.

(*b*) The procurement, reception, storage, maintenance and replacement of all motor vehicles.

(*c*) The procurement, storage and supply of spare and repair parts, tools, accessories and supplies of all motor vehicles.

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*NOTE—G. O. No. 38, W. D. 1918, establishes a Motor Transport Service under the Quartermaster Corps.

(*d*) The establishment and operation of all M. T. C. garages, parks, depots and repair shops.

(*e*) The establishment and operation of all M. T. C. personnel.

(*f*) The organization and technical training of M. T. C. personnel.

(*g*) The salvage and evacuation of damaged motor vehicles.

(*h*) The homogeneous grouping of motor vehicles.

(*i*) The operation, in accordance with instructions from the proper commanding officer as to their employment of groups of motor vehicles of Class "A" as defined in Paragraph 18, below.

18. With respect to the control exercised over them by the M. T. C., motor vehicles may be grouped into two classes, viz.:

(*A*) Those whose operations the M. T. C. controls, and for whose efficient functioning as transportation units it is directly responsible.

(*B*) Those over which the M. T. C. exercises merely technical supervision.

Class "A" includes all caro-carrying or passenger-carrying motor vehicles used for general transportation purposes used in the S. O. S., and the motorized portion of such reserve trains as may be held for general transportation purposes in or in rear of an army, under the control of the army commander.

Class "B" includes all motor vehicles not included in Class "A." Substantially these will be such motor vehicles as are assigned by Tables of Organization to organizations such as divisions, corps, troops and army corps.

As explained above, the M. T. C. controls the operation of Class "A" vehicles, but merely maintains a technical supervision over the operation of Class "B" vehicles. *This technical supervision will, however, be interpreted very broadly by all concerned.* Bulletins will be published from time to time concerning the proper methods of operation, care and maintenance of motor vehicles. M. T. officers will keep themselves constantly informed as to how motor vehicles of the organization to which they are attached are being used, and will report to the proper commanding officer any abuses which they discover. The commanding officer to whom such reports are made will hold to strict responsibility any officers who have motor vehicles under their control which have been in any way damaged or injured on account of disregard of proper methods of operation, care and maintenance laid down by such bulletins.

It must be understood that when vehicles are placed in Class "A," the M. T. officer controlling them has no authority to determine the use to which they are put; he merely guarantees that they shall perform as efficiently as possible whatever work the commanding officer chooses to assign to them. It must be further understood that when vehicles are placed in Class "B" the commanding officer of the unit to which they are allotted is directly responsible for their efficient functioning to the same degree as is the M. T. officer for vehicles in Class "A."

19. All garages, parks, depots, repair shops and similar establishments of the M. T. C. will be manned and operated by M. T. personnel, and their commanding officers will report direct to the M. T. officer on the staff of the unit, or of the section of the S. O. S. to which they are attached. Any such establishments which may now be in existence are hereby placed under the control of the M. T. C. in the manner stated above. The issue of stock from such establishments, the repair and replacements of motor vehicles, etc., will be done in accordance with the provisions of G. O. No. 44, H. A. E. F., 1918.

20. Motor vehicles and their spare parts, tools and accessories purchased by other staff corps or services, will be turned over to the M. T. C. on their arrival in France and assigned by the M. T. C. as the best interests of the service dictate, regardless of their original source of procurement; except that ambulances, and non-cargo carrying motor vehicles such as machine shop trucks, gun mounts, rolling kitchens, laboratory trucks, water sprinklers, etc., will be kept by the M. T. C. subject to the orders of the staff corps or service for which they have been purchased. In the case of such ambulances and non-cargo carrying vehicles, the M. T. C. will provide parking facilities for their reception and furnish facilities for the maintenance of the chassis and of such other parts as may be arranged for between the M. T. C. and the other staff corps or service concerned.

21. All questions which may hereafter arise affecting the design or construction of motor vehicles procured by or for any staff corps or service, insofar as concerns the chassis, or any element with the supply of maintenance of which the M. T. C. is concerned, will be decided by consultation between the staff corps or service concerned and the M. T. C., with a view of securing standardization of design and type, and of facilitating repair and replacement.

22. The personnel now assigned for duty in the M. T. C. under the Chief Quartermaster, in accordance with the provision of G. O. No. 70, H. A. E. F., 1917, is hereby assigned for duty in the M. T. C. Such personnel as is now being trained by other technical and administrative services for duties with the M. T. C. will be attached to it for duty. Personnel once attached to the M. T. C. will not be detached from it except by the C. G., S. O. S., or higher authority.

23. Upon the request of the Chief of staff corps or service, there will be attached to the office of the Director, M. T. C. at least one officer who will be the representative within the M. T. C. of the chief of that staff corps or service in all questions concerning motor transportation for that particular service.

24. In each army, corps and division, the army artillery, and each section of the S. O. S., there will be an officer of the M. T. C. designated Motor Transport Officer of that command, who is responsible for the efficient operation of the M. T. C. within the limits of the command. His activities are controlled by G-1 in divisions or corps, and by G-4 in armies, in the same manner as are those of the other representatives of technical and supply services in such commands. The functions of this officer are as follows:

First, he is in command of all motor transportation of Class "A" as defined above and controls its operation as specified in Par. 17 (h) above. He is also in command of all M. T. C. maintenance and supply agencies on duty with the command.

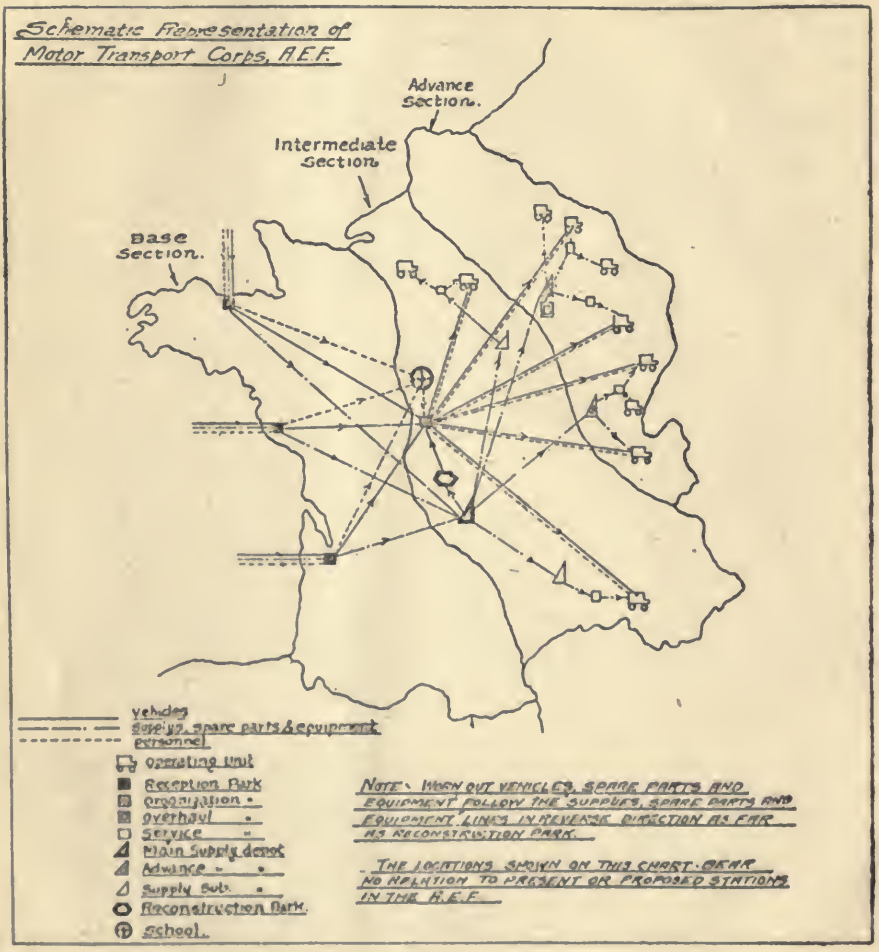
Second, he exercises the functions of a staff officer as regards supply of all M. T. C. property for the command and as regards the technical supervision over motor vehicles of Class "B" provided for in Par. 18 above.

To carry out this technical supervision, it will be his duty to make frequent inspections of all matters having any bearing on the motor transportation of the command. In making these inspections he will be afforded every facility by all concerned. He will make frequent reports to the branch of the General Staff by whom his activities are controlled, covering such matters as the suitability of the personnel charged with operating motor vehicles, the mechanical condition of the vehicles, the conditions under which they are operated, needs for repair or overhaul, carelessness or waste on the part of any individual or organization and similar matters, together with his recommendation as to any action that should be taken.

25. The number of M. T. C. vehicles, units and personnel is based on the General Organization project and on the Service of the Rear project. The priority movement of all M. T. C. units from the United States to the theatre of operations under the above projects is fixed in the priority schedule.

26. All requests for modifications of existing projects, or for additional units, altered allowance of spare parts, machinery, etc., not provided by existing projects for all branches of the M. T. C. will be centralized in the office of the Director, M. T. C. Such requests, as well as all requisitions for transmission to the War Department, will be submitted to the C. in C., the various items of requisitions being segregated under the different staff service headings so as to meet the requirements of existing law.

27. Regulations governing in detail the organization of the M. T. C., the organization and training of its personnel, the functioning of its establishments, the system of supply, repair, replacement and salvage of motor vehicles, spare parts, tools, accessories, etc., under the provisions of this order will be prepared by the Director, M. T. C. for approval of the C. in C.


Schematic Representation of
Motor Transport Corps, A.E.F.
Advance Section.
Intermediate Section.
Base Section.
Vehicles
Supplies, spare parts & equipment.
Personnel.
Operating unit
Reception Park
Organization "
Overhaul "
Service "
Main Supply depot
Advance " "
Supply Sub. "
Reconstruction Park.
School.
NOTE:- WHEN OUT VEHICLES, SPARE PARTS AND EQUIPMENT FOLLOW THE SUPPLIES, SPARE PARTS AND EQUIPMENT LINES IN REVERSE DIRECTION AS FAR AS RECONSTRUCTION PARK.
THE LOCATIONS SHOWN ON THIS CHART BEAR NO RELATION TO PRESENT OR PROPOSED STATIONS IN THE A.E.F.

M. T. C. ESTABLISHMENTS

28. The various duties prescribed in the above mentioned orders are carried out by the following M. T. C. establishments and formations:

M. T. C. Reception Parks
M. T. C. Schools
M. T. C. Organization Parks
M. T. C. Groups
M. T. C. Reserve Groups
M. T. C. Detachments
M. T. C. Service Parks
M. T. C. Overhaul Parks
M. T. C. Reconstruction Park
M. T. C. Main Supply Depot
M. T. C. Supply Sub-Depots

The general functions of these agencies are as follows:

(a) *M. T. C. Reception Parks.*—At each Base Port will be established a Reception Park to which all motor vehicles will be automatically directed immediately on landing. At these parks vehicles will be received, registered, set up and forwarded, normally to designated M. T. C. Organization Parks. When the exigencies of the service so require, vehicles may be sent direct to the organizations to which they are assigned. The issue of vehicles to units in this manner is made only on orders from G. H. Q.

(b) *M. T. C. Schools.*—These organizations receive personnel by assignment from casual camps, base ports, hospitals and various other sources; such vehicles as are required for their operation, from M. T. C. parks and such other equipment as is necessary, from the M. T. C. Main Supply Depot. At these institutions the student is trained by a corps of instructors maintained for that purpose, examined and classified, and normally forwarded to designated organization parks, according to the requirements indicated by the latter. The M. T. C. Schools are closely allied with the M. T. C. Organization Parks, and shape their policies according to the requirements of the latter.

(c) *M. T. C. Organization Parks.*—These organizations receive personnel from schools, casual camps, hospitals and from various other sources. Vehicles are obtained from Reception Parks. Other equipment and supplies are obtained from the M. T. C. Main Supply Depot as required. At Organization Parks, vehicles and personnel are organized and equipped for service and held in readiness for assignment either by organization, detachment or as individuals.

(d) *M. T. C. Groups.*—The term M. T. C. Group is generally employed to indicate dissimilar collections of M. T. C. units and detachments operating in tactical or territorial commands, units or stations. For example, the M. T. C. units and detachments assigned to, or operating in a base section could be collectively designated as "M. T. C. Group, Base Section No....." The M. T. C. units and detachments operating with the Nth Corps would be collectively designated as "M. T. C. Group, Nth Corps." For those operating at G. H. Q. the designation would be "M. T. C. Group, G. H. Q., American E. F." For those operating at Camp X, the designation would be "M. T. C. Group, Camp X."

(e) *M. T. C. Reserve Groups.*—Reserves of motor transportation held for immediate call of armies, corps and divisions are designated as M. T. C. Reserve Groups of the Armies, etc., with which they are serving. Reserve groups will maintain, in addition to tabulated M. T. C. organizations such as transport and repair units, a number of fully equipped vehicles and personnel, organized into M. T. C. detachments. These groups may consist either of personnel and vehicles withdrawn by division, corps or army commanders from the forces under their command or of M. T. C. units ordered forward from Organization Parks. These Reserve groups are established in order to provide a means of filling tactical requirements which demand the sudden use of reserves of motor transportation, either for the transportation of personnel or of supplies, where the situation permits their withdrawal from units not requiring at that time their full quota of vehicles, and where ocean tonnage does not permit of the ready accumulation of a sufficient reserve of vehicles to meet such demands.

(f) *M. T. C. Detachments.*—These consist of personnel and vehicles which are organized and placed under the supervision of M. T. C. officers responsible for their discipline and economical operation, but which are not specifically included in tables of organization as distinct fixed units. Their duties vary according to the nature of the service to which they are assigned.

The Repair Parks of the M. T. C. are known as Service, Overhaul, and Reconstruction Parks.

(*g*) *M. T. C. Service Parks.*—These are primarily designed to make repairs not requiring great interval of time or heavy equipment, and are located wherever there is motor transport activity. The extent of the repairs to be made by a Service Park, or the time element, depends on local circumstances and is determined by the particular elements in each case. The repairs to be made for a mobile group at the front will be less extensive than for a permanent group at the rear.

Service Parks will ordinarily be established in such buildings as are available, with the addition of such other buildings as may be necessary, and will be either mobile or immobile, depending on the character of the group they serve. Buildings, when erected, and the machine tools and equipment will be of standard types for these parks. The organization of a Service Park includes a supply section which carries a limited stock of spare parts, supplies, and equipment for the motor vehicles which the park serves. Repaired vehicles are either turned over to the organization from which they came or are held to replace disabled vehicles. In the latter case the organization will be given immediate replacement of the disabled vehicle from the replacement yard of the Service Park. As exigencies arise, certain of these parks may be enlarged, and their scope of work broadened until they reach the full strength and capacity of Overhaul Parks. Detailed instructions governing the nature of the work to be performed by Service Parks, and the general practices of these establishments, will be found in the appropriate chapter of this manual.

Service Parks operating in the Advance Section will be mobile or semi-mobile, varying with the conditions obtaining at their several locations. Mobile Service Parks have all machinery mounted permanently on motor vehicles or trailers, and can be moved with an hour's notice. Semi-mobile parks are equipped with motor driven machine tools, each tool skidded for quick handling. Such parks can be moved within a few hours, when transportation is available on which to load the already skidded machinery. They can be operated if need be, in the open under canvas, or preferably in any available shelters the location may offer.

(h) *M. T. C. Overhaul Parks.*—These parks are primarily for the purpose of making a general overhaul and repair of vehicles requiring work of a nature beyond the capacity of M. T. C. Service Parks. They differ from Service Parks in that the character of their work is much more extensive and general, requiring heavier equipment and longer periods of time for completion; they may therefore be of a permanent or semi-permanent nature. They receive vehicles for repair and overhaul from M. T. C. Service Parks and, exceptionally, from other organizations, in which latter case they make the repairs ordinarily made by Service Parks. In general, after repair or overhaul, the vehicle is sent to a designated Organization Park. When so directed, however, these parks may completely equip vehicles and deliver them to M. T. C. Groups or detachments held in reserve with combatant units. Overhaul Parks will ordinarily be located in the Advance Section of the S. O. S., but they may also be established in certain specified localities further in the rear.

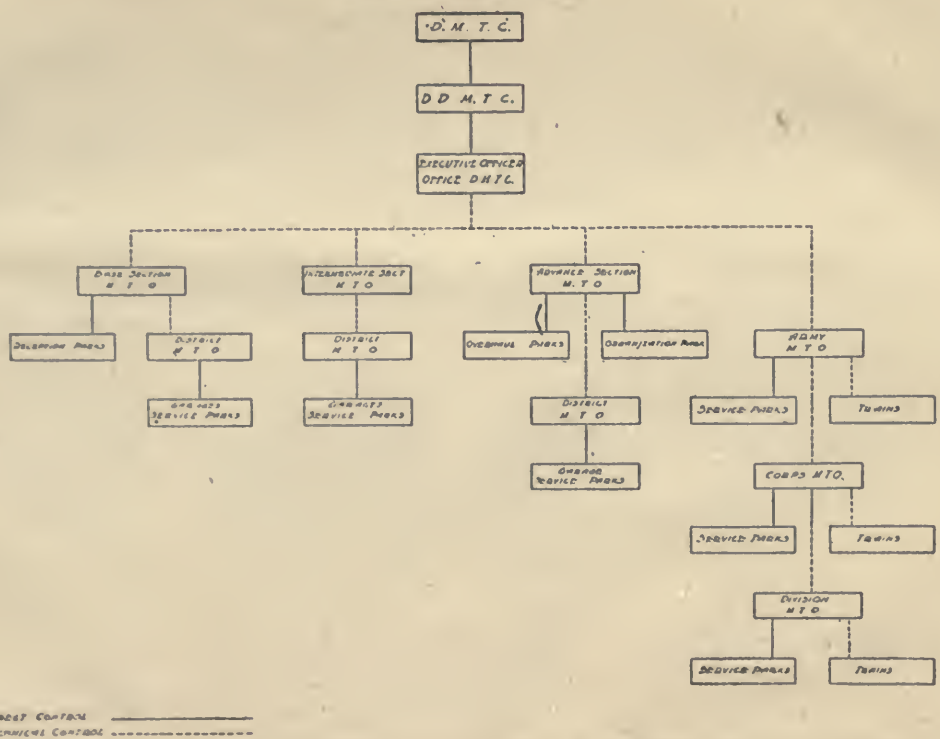
(i) *M. T. C. Reconstruction Park.*—This organization is intended primarily to make the major repairs to and reconstruction of vehicles and parts thereof. It receives wrecked vehicles, parts, and other machines evacuated from the front, or sent back by M. T. C. Service or Overhaul Parks. Vehicles and parts are repaired, the vehicles sent to designated Organization Parks, and parts and other mechanism to the M. T. C. Main Supply Depot for reissue. This park is also a production park, in that it undertakes all necessary M. T. C. production work and manufacturing the emergencies may require. The M. T. C. Reconstruction Park maintains a Salvage Section through which damaged and worn out vehicles and mechanisms pass for examination, classification and disposition.

(j) *M. T. C. Main Supply Depot.*—This organization is established for the reception, storage and distribution of tools, spare parts and repair parts, and materials and supplies especially pertaining to the M. T. C. M. T. C. supplies, upon receipt at base ports, or by European purchase, are shipped automatically to the M. T. C. Main Supply Depot. This establishment furnishes supplies to other M. T. C. institutions according to their requirements.

(k) *M. T. C. Supply Sub-Depots.*—These organizations are similar in their functions to the M. T. C. Main Supply Depot. Their supplies are generally received, however, from the M. T. C. Main Supply Depot, and the organizations or territory which they supply are more closely defined and limited. These sub-depots also provide the shop stock of overhaul and service parks. They may be considered as Advance or Intermediate Depots, according to their location.

·CHART·

GENERAL ORGANIZATION
OF THE
MOTOR TRANSPORT CORPS.



CHAPTER II.

ADMINISTRATION

GENERAL ORGANIZATION OF THE M. T. C., A. E. F.

(See Chart).

29. There is a Director of the M. T. C. who is responsible for the proper and efficient functioning of the entire M. T. C. All enlisted and commissioned personnel of the M. T. C. are the service subordinates of the D. M. T. C., who has the power to issue orders thereto under such regulations as he may prescribe in all matters placed under his jurisdiction by G. H. Q., G. O. No. 74 of May 11, 1918, and subject to such restrictions as may be imposed by current orders of the A. E. F.

30. There is a Motor Transport Officer on the Staff of the C. G. of each Army Corps, Division and Army Artillery, who is responsible to the C. G. or C. O. for the proper and efficient functioning of all M. T. C. activities in the Army, Corps, Division and Army Artillery and is subject to such supervision, mostly technical, from the D. M. T. C. as is allowed by G. O. No. 74, as mentioned above.

31. There is a Motor Transport Officer on the Staff of the C. G. of each Section or such territorial district of the S. O. S. who is responsible to the C. G., or C. O. for the proper and efficient functioning of all M. T. C. activities in the Section, and is subject to such supervision, mostly technical, from the D. M. T. C. as is allowed by G. O. No. 74, as mentioned above.

32. Each section of the S. O. S. is divided into districts in charge of local Motor Transport Officers, the number and size of the sections being determined by local conditions.

HEADQUARTERS, M. T. C.

33. The following is a brief outline of the organization of the office D. M. T. C. The offices of the section, district, army, corps, division and army artillery M. T. O.'s will be organized along similar lines, bearing in mind that all the duties may have to be carried on by one officer in a district with few M. T. C. activities.

The office of the Director handles all matters relative to the control, supervision and direction of the activities and personnel, assigned and attached to the M. T. C.

The Director is assisted by a Deputy Director who acts for and in the absence of the Director, and performs such other special duties as may be assigned to him.

An Executive Officer acts for and in the absence of both the Director and the Deputy Director, and co-ordinates the work of the different divisions of the office D. M. T. C.

The office of the D. M. T. C. is further divided as follows:

EXECUTIVE DIVISION

(a) *Administration Branch.*—Supervises and handles the clerical work of the office; receives and distributes mail; maintains office files and records, furnishes clerks and stenographers for temporary work; censors outgoing mail, prepares and follows up all telegrams and cablegrams, has in charge the general supervision of buildings and the furnishing of office supplies.

(b) *Personnel Branch.*—Handles all matters relative to procurement, assignment, transfer and replacement of officers, enlisted men and civilians. Issues all orders and regulates all promotions; supervises the discipline, housing and messing of the headquarters detachment.

(c) *Statistics Branch.*—Prepares and maintains all statistics and statistical records of the M. T. C. except as hereafter provided; prepares such statistical reports are may be regularly or specially required; prepares all reports not assigned to other branches; maintains a library of general information on M. T. C. matters not required exclusively by other divisions; procures and distributes M. T. C. blank forms.

(d) *Finance and Accounting Branch.*—Handles all matters relating to property and financial accountability and responsibility for the M. T. C.; maintains vehicle registration records.

SUPPLY DIVISION

Handles and supervises the procurement and warehousing of all articles of whatsoever nature supplied by or through the M. T. C. Distributes all supplies except assembled motor vehicles; places requisitions for supplies from the United States; supervises the purchase of M. T. C. supplies in Europe; determines locations of storage points and maintains stock lists and catalogues.

REPAIR DIVISION

Receives all vehicles at base ports and prepares them for field service; handles all matters pertaining to the installation and equipment of shops up to the time they are ready for operation; supervises the operation of shop and repair units; prescribes shop practices; handles all matters pertaining to the salvage of M. T. C. material.

OPERATIONS DIVISION

Handles all matters relative to the assignment and distribution of motor vehicles; directs and supervises the operation and routing of convoys; supervises the operation of pools, detachments and groups in the S. O. S.

INSPECTION DIVISION

Performs all periodical and special inspections for the office D. M. T. C. Initiates new development work; acts as a reference bureau on all engineering questions. Designs new equipment and standardizes existing equipment. Handles all liaison matters between the A. E. F. and the U. S., and between the M. T. C. and other services of the A. E. F. Collects and co-ordinates the data necessary to properly carry on this work.

PLANS AND PROJECTS DIVISION

Keeps in touch with military situation and initiates new projects, and carries out all necessary work as far as the M. T. C. is concerned in connection therewith; acts as a locating, planning and follow-up division in connection with all new projects. Determines designs, personnel, and equipment for all new projects in liaison with other divisions involved.

TRAINING DIVISION

Handles all matters relative to the training of officers and enlisted personnel; prepares courses and manuals pertaining to instruction; co-ordinates M. T. C. training with the training functions and activities of the Army; supervises M. T. C. training in the Depot Divisions.

MOTOR TRANSPORT OFFICERS

S. O. S.

34. (a) *Section M. T. O.*—He has general charge of all M. T. C. activities in his Section. He will appoint District M. T. O.'s as they may be required throughout the Section and through them supervise the work of the various reception parks, service parks, and local pools. To exercise the technical supervision required, it will be his duty to make frequent inspections of all matters bearing on Motor Transportation.

(b) *District M. T. O.*—In addition to the technical supervision of all motor transportation matters, he will directly supervise all reception parks, service parks and local pools. As far as possible, District M. T. O.'s will be assigned to territory under an immediate C. O. In all cases where the district covers the territory of more than one C. O., he will act as technical supervisor only under orders of the M. T. O. of the Section. He will act on all requisitions originating in the units in his district and forward them to the M. T. C. sub-depot serving his district through the Section M. T. O.

ARMY

35. (a) *Army M. T. O.*—He has general charge of all M. T. C. activities in the Army. He will initiate the procedure for promptly supplying all units with spare parts, arrange for the proper distribution of all service parts, and see that they function properly. He will handle all Class "A" transportation of the Army troops and all other Class "A" transportation through the various Corps and Division M. T. O.'s.

(b) *Corps M. T. O.*—He has charge of all M. T. C. activities of the Corps, following the general methods of procedure outlined by the Army M. T. O. He will handle all Class "A" transportation of the Corps troops and all other Class "A" transportation through the various Division M. T. O.'s.

(c) *Division M. T. O.*—He has charge of all M. T. C. activities in the Division, following the general methods of procedure outlined by the Army and Corps M. T. O's. He will handle all Class "A" transportation of the Division.

GENERAL DUTIES OF ALL SECTION, DISTRICT, ARMY CORPS AND DIVISION M. T. O.'s

36. (a) They will have, in addition to the absolute control of all Class "A" vehicles, technical supervision over all motor transportation. To carry out this technical supervision, it will be their duty to make frequent inspections of all matters having any bearing on Motor Transportation and make proper reports to their immediate commanding officers.

(b) They will assign the vehicles within their jurisdiction under the direction of the C. G., C. O., or branch of the General Staff by which their activities are controlled.

(c) They will maintain an accurate record of the status of motor vehicles under their jurisdiction and keep higher authority fully informed of its serviceability and general condition.

(d) They will make recommendations concerning the care and use of motor vehicles.

(e) They will report all irregularities in the operation and repair of motor transportation to the appropriate commanders.

(f) They will supervise the operation of all M. T. C. repair units in organizations assigned under their jurisdiction.

(g) They will pass on all requisitions for M. T. C. supplies needed and handle them as provided in current instructions.

(h) They will assure the proper supply of all M. T. C. materials within the limits of their authority.

CHAPTER III.

SUPPLY SYSTEM

GENERAL

37. The basis of the organization of the Supply Service of the M. T. C. is to give the most efficient service with the least duplication of stocks, and to expedite salvage with a view of saving ocean tonnage.

38. In view of the great diversity of types and makes of motor vehicles in use in the A. E. F., it will ordinarily be impracticable to furnish each stock room with the spare parts of all makes and types of vehicles in use in the A. E. F. Such a proposition would require an excessive stock in France. It will be necessary to segregate makes and models of vehicles by restricting the diversity of makes in any given formation, as well as in localities in the S. O. S. This districting of makes and models is imperative for the satisfactory operation of a supply system.

39. All motor supplies, except gasoline and oils, whether from the U. S. or from European markets are shipped to the Main Supply Depot of the M. T. C. From this depot, they are shipped to advance or sub-supply depots of the M. T. C. Where practicable, the sub-depots will be located in the immediate vicinity of overhaul or service parks, so that, wherever possible, the sub-depot may operate in addition as the stock-room of a repair park, so as to minimize as far as possible the duplication of parts stocks. Operating motor transport units, as well as service parks and other repair formations, are supplied from the sub-depot designated as the supply point therefor. For combat organizations, the sub-depot so designated will ordinarily be the one nearest to the specific organizations to be supplied. In the S. O. S., sub-depots will ordinarily be designated in each territorial section of the S. O. S. to serve the motor transport units operating therein.

40. The supplies necessary for the operation and maintenance of motor vehicles are of two classes: (a) Materials and parts common to all motor vehicles, irrespective of make or type and (b) spare parts pertaining to each type, make and model of motor vehicle. Each sub-depot or stock room or repair park will carry a proper stock of the first-class, and in addition, necessary stocks of articles of the second class to supply motor vehicles of the make and type that pertain to motor transport organizations operating within its territory, or that are assigned to the particular park for repair.

41. Attention is called to the fact that the supply and delivery of gasoline, lubricating oils, and similar petroleum products to motor transport organizations is made by the Gasoline and Oil Service, organized as one of the branches of the Supply Division of the Office of the Chief Quartermaster, A. E. F.

REQUISITIONS

42. Requisitions for M. T. C. supplies will be made out on M. T. C. Form 160, and will be submitted in quadruplicate, and must be prepared with the utmost care in order to insure proper filling. Part numbers and description of articles should be given exactly as in catalogs furnished by the M. T. C. When catalog is not available, sufficient description should be given to insure proper filling of requisition and, if possible, a sketch should accompany the requisition, giving measurements of the article desired. One of the most frequent causes of failure to fill a requisition is the inability of the supply depot to determine the exact article wanted, due to a careless or incomplete description of the article on the requisition. Similar articles are given various names by different manufacturers and it is often impossible to determine an article from its name alone, without any reference to a specific catalog number, or ample description of the article itself.

43. Requisitions submitted by M. T. C. organizations will normally go through the following channels:

(a) *Units Pertaining to an Army.*—All requisitions originating with formations of a division will be submitted to the Division M. T. O., who, after vise by G-1, will forward them through proper channels, to the Army M. T. O. Similarly, requisitions from corps elements will be forwarded by the Corps M. T. O. Requisitions from Army elements, not pertaining to corps or divisions, will be submitted direct to the Army M. T. O. The Army M. T. O., after approving requisitions, and after vise by G-4, will forward same to the M. T. C. Supply Depot designated in orders therefor, for supply.

(b) *Units Pertaining to the S. O. S.*—Requisitions emanating from units pertaining to the S. O. S. will be forwarded to the M. T. O. of the section in which unit is serving, who after approval, will transmit same to the proper depot for supply.

(c) *Depot Divisions.*—After approval of requisitions from Motor Transport formations pertaining to a depot division, the division M. T. O. will forward same directly to the supply depot designated for his division.

(d) Requisitions for all units not included in the above classes will be handled according to specific instructions that may be issued to cover their individual cases.

44. Before forwarding a requisition, the M. T. O. will carefully scrutinize same, to be sure that excessive amounts are not being asked for. Each M. T. O. should have such complete knowledge of the condition of operation and upkeep of the transportation under his supervision that he can intelligently judge as to the correctness of a requisition. In case a requisition appears to be excessive, in addition to any revision thereof he may make, he should have an inspection made of the organization submitting same, either to verify the necessity of the requisition, or to take any corrective measures that may be necessary in the case. It is essential that M. T. Officers fully realize the importance of carefully weighing their approval of a requisition, as the issuing depot has no authority to revise the requisitions it receives, nor could it do so intelligently with data at its command. However, the C. O. of a depot should bring to the notice of his superior officer all cases of requisitions that appear to him on their face to be excessive.

45. Supplies shipped out to organizations on requisitions, are accompanied by shipping lists or action statements. Copies of these action statements are forwarded by the sub-depot to the depot from which it is supplied and these statements become an automatic requisition to such depot for replacement of material to the sub-depot concerned.

46. All articles necessary to the operation and maintenance of motor vehicles have been cataloged. Catalog No. 1 contains the materials common to all motor vehicles. The parts special to each type or make of vehicle are listed in special catalogs. In each catalog articles are designated as "expendable" or "non-expendable." This notation has no bearing on the subject of property accountability, which is regulated by orders issued from General Headquarters, A. E. F. The designation of "non-expendable" indicates that an article so marked will only be replaced or issued when the broken or unserviceable article accompanies the requisition or request therefor. If it is impossible to return the broken article, a certificate covering the reasons therefor must accompany the requisition. There are several purposes for this requirement. It insures the return of the broken part for any salvage work that may be necessary to reclaim it. It prevents a transport unit from keeping a large junk pile that will interfere with its mobility or entail the loss of much material that is capable of salvage. It allows a technical examination of a worn out or broken part to determine whether such was due to faulty material, faulty design, or faulty operation. This information is essential to the proper operation of the supply system.

DELIVERY OF SUPPLIES

47. Supplies from the Main Depot are usually delivered to the larger sub-depots by rail, in carload lots, wherever practicable. This delivery is supplemented by motor truck, whenever possible, making use as far as practicable, of

motor vehicle convoys changing station. In transporting supplies from main advance depots to sub-depots, or from the latter to the various parks, use is made either of rail or motor transport, or both, taking advantage of every means of delivery that may be available.

48. Shipments of supplies from a sub-depot to organizations pertaining to field armies are assembled and delivered to a point designated by the M. T. O. of the Army, where the units concerned call for their supplies. This point of delivery should be as near the division as practicable. The details of this distribution must be arranged by the Army M. T. O. in conjunction with the M. T. O., under whose supervision the sub-depot may be, according to the varying circumstances of service. The controlling factor of any solution must be to assure the prompt and efficient delivery of the supplies authorized. In some cases, trucks may be assigned to the sub-depot to deliver the supplies directly to the issuing points; in other cases, division M. T. Officers may send trucks on designated days to the sub-depot to receive their supplies direct.

49. In formations pertaining to the S. O. S. and to depot divisions, the delivery or supplies from sub-depot to the organization, either by rail or truck is arranged for according to the particular case.

50. As soon as it may be considered practicable, effort will be made to dispense with requisitions, in cases where M. T. C. formations turn in to a sub-depot a worn out or damaged part in exchange for a serviceable one, but at the present time, for various reasons, this is not considered advisable.

DUTIES OF VARIOUS M. T. OFFICERS IN REFERENCE TO SUPPLY

51. The M. T. O. of any formation is charged with assuring the adequate supply of parts and materials to the motor transport units under his supervision or control. He examines requisitions from all such units as prescribed in Paragraph 44 above, and supervises the operation of such depots as may be placed under his control.

52. To properly carry out these duties, the organization of his supply office should cover the following responsibilities.

(a) *Procurement.*—This includes the making of estimates, requisitions on supplying agencies, or local purchase; experience tables.

(b) *Storage.*—Includes handling at warehouses and operation of depots and stock-rooms.

(c) *Distribution.*—Receipt of requisitions, transmission to stock-rooms for issue and delivery to consumers; allotment of stocks to various sub-depots.

(d) *Traffic.*—Following up all shipments to and from depots to prevent delays or loss.

53. The extent of his establishment, as well as the number of assistants, will depend entirely on the nature and size of the formation of which he is M. T. O. The Supply Staff of the M. T. O. of a small district, or the C. O. of a Motor Transport Company, will consist ordinarily of a supply sergeant; that of the M. T. O. of an important section of the S. O. S. will approximate closely to that of the D. M. T. C.

54. The officer in charge of the Main Supply Depot is responsible for the proper receiving, warehousing and prompt issue of supplies to auxiliary sub-depots on requisitions or orders properly authorized. A similar duty falls on the officer in charge of a sub-depot, and in addition, he is also charged with maintaining his stock to the amounts prescribed therefor. The stocks to be kept in any depot should be adequate to maintain the vehicles operating within its radius of action, and this amount is determined by the M. T. C. officer under whose control and supervision the depot operates. Thus, for the Main Supply Depot, this responsibility falls upon the office of the D. M. T. C.; for a sub-depot of a section of the S. O. S., upon the M. T. O. of that section.

55. Detailed rules and instructions for the organization and operation of supply depots will be issued by the D. M. T. C. from time to time.

CHAPTER IV.

REPAIR SYSTEM

GENERAL

56. Motor Transport repair facilities are divided into three general classes:

1. Service Parks,
2. Overhaul Parks,
3. Reconstruction Parks,

which function as a progressive system of repair from the front line positions to the intermediate and base section areas, graduated for rapid evacuation and repair at places best fulfilling all conditions attendant upon the nature of the repair.

57. In order to avoid any misunderstanding caused by a confusion of terms commonly used in connection with M. T. C. repair activities, the following authorized definitions of terms are given and must be carefully noted and used:

(a) *Caretaking* means the work of maintenance, rather than repair, exercised by operating personnel.

(b) *Service* means special maintenance of a more highly skilled character and light repair supplied by personnel not belonging to the operating organization; in other words, by the Service Park.

(c) *Reconstruction* is rebuilding, salvage, remanufacture, main overhaul (meaning overhauling with almost complete substitution of new parts) and reclamation.

(d) *Overhaul* is intermediate between service and reconstruction because it borders on each, sometimes taking almost the character of the one, then the other. Its salient features are somewhat less basic remanufacture methods and particularly the re-use of repaired parts frequently on the vehicle from which they were taken.

(e) *Machine Shop Truck (or Trailer)* consists of the motor truck (or trailer) together with all of its machine tools and equipment of that truck (or trailer) complete.

(1) *Motorcycle Service Truck.*—This is a repair truck used exclusively for motorcycle service.

(f) *Parts Truck (or Trailer); Tire Press Truck (or Trailer); Office Truck (or Trailer) and Wrecking Truck* are terms referring in each case to the vehicle and its equipment complete.

(g) *Service Park Unit.*—The personnel authorized for the operation of a machine shop truck or the equivalent equipment.

(h) *Service Park.*—The complete organization consisting of both the material and the personnel comprising the repair establishments.

(i) *Overhaul Park.*—A park whose purpose is between service and reconstruction.

(1) *Reception Park.*—A type of overhaul which deals with the initial reception, assembly and equipment of vehicles for service.

(j) *Reconstruction Park.*—The reconstruction park is a repair establishment which has as its main purpose the rebuilding, salvage and remanufacture of M. T. C. equipment.

(k) *Repair Unit.*—Is the personnel authorized for the operation of an overhaul park. One or more repair units also furnish the personnel for the reconstruction park.

58. Caretaking. (See Chapter XI.)

SERVICE PARKS

59. The functions of service parks are to make repairs to vehicles and their component parts within the scope of the mechanical equipment provided and to replace by new parts or units such items as cannot be adequately and satisfactorily repaired.

60. Service Parks with combat divisions are mobile organizations. Officers commanding these units should systematize the duties of the personnel to be performed during a move. They should also not allow the shop to exceed its scope of work and not allow vehicles or parts to collect which should be evacuated to the rear.

61. The factors which determine whether or not a vehicle should be repaired by a Service Park or evacuated are:

(a) Dismantling necessary to accomplish repair. Disassembling should not go beyond a point where the vehicle could be quickly put back into shape at least to be towed. The number of vehicles in this condition should be such that the park can prepare all the towing within eight hours.

(b) The number of vehicles under repair at one time. This should not exceed 12 to 15 vehicles under or awaiting repair.

(c) The number of disabled units or assemblies. Mobility requires repairs to be made unit by unit. If several units must be repaired the vehicle belongs in an Overhaul Park.

(d) Spare parts required. When a known parts shortage is encountered the vehicle should be evacuated.

(e) Character of repair operation. A service park can compete advantageously with the specialized and extensive machinery of overhaul and reconstruction parks only in the simplest kinds of machine and repair operations.

(f) Assigned tasks of men. Whenever the machinist, welder, blacksmith, or electrician, etc., can increase the number of jobs turned out, that is the service, by working as hand tool mechanic, his special work should go to the rear. Exchange of parts gives maximum service.

62. When inspection shows that vehicles brought into the park are beyond its scope, they will not be repaired in the park, but will be evacuated to an Overhaul Park.

63. Immobile service parks may exercise more latitude than mobile service parks in undertaking heavier repair; their geographical location frequently compels this. Nevertheless, rule (f) above must be constantly kept in mind. Should circumstances present a temporary slack period for a service park and nearby overhaul park, the service park is entitled to the benefit of it as a recuperative period for extra-hour demands already met or to be met later.

64. Service Parks should be located within a distance of eight miles from the organization served. The officer should select a site with hard ground and ample parking space, and should take advantage of existing buildings whenever possible. Five thousand square feet of roofed space and 15,000 square feet of parking space is the amount desirable.

65. The personnel authorized for a Service Park is given in approved Tables of Organization. It is intended that, as far as possible, the personnel should be specialized as shown.

66. In order to simplify and make uniform the operation of service parks, the following system has been prescribed and forms provided for its operation:

(a) The driver of the vehicle to be repaired will upon arrival at the service park report to the inspector, turn in the vehicle log book and report any other information concerning the vehicle.

(b) The inspector will inspect the vehicle and fill in M. T. C. Form 112, and turn both copies over to the clerk. Repairs will be itemized. The inspector will give the receipt to the driver and attach the original Form 112 to the vehicle. Containers for Form 112 are provided for this purpose.

(c) Any parts or supplies necessary will be obtained from the stock truck by the mechanics on M. T. C. Form 114, submitted in duplicate. In service parks the "Dept." does not need to be filled in.

(d) Duplicate copies of requisitions will be retained by the store-keeper and originals sent to the clerk where they will be attached to work order. The vehicle log book will be kept posted so that delivery of the vehicle will not be delayed for this reason.

(e) After all repairs are completed the vehicle will be tested and inspected. The final inspection report on back of the original of Form 112 will be filled in and sent to the clerk.

(f) Upon receipt of form, the clerk will complete the vehicle log book entries from this form. After the log book is signed, Form 112 and requisitions will be filed with the book until vehicle is called for.

(g) The driver calling for a finished vehicle will report to the clerk, present vehicle receipt, sign Form 112, and receive the vehicle log book. The log book will be the driver's authority for taking the vehicle from the park.

(h) Both copies of M. T. C. Form 112 will be used to complete the required records and reports and then forwarded to the D. M. T. C.

67. It is important that repair parks have ample supplies of material and spare parts.

68. Hoarding of stock must be avoided and pooling of parts at supply depots practiced. Infrequently used parts and salvage should not be allowed to collect, but should be evacuated regularly on vehicles which have brought up parts.

69. Parts and material apt to be damaged by exposure in shipment, must be properly protected. All parts and material evacuated must be tagged with M. T. C. tag Form 119 properly filled in, and forwarded to the nearest Supply Depot.

70. The amount of stock carried by these parks must be systematically controlled. A park will not carry more stock than its records show to have been its average ten days' consumption.

71. The personnel authorized provides a Sergeant 1st Class, to take charge of the store-room-truck and keep the stock records on M. T. C. Form 104.

72. The system recommended for keeping stock in store-room-trucks is as follows:

(a) Assign vertical sections to different classes and makes of parts, preferably by chalk lines of division to make change in arrangement easy.

(b) Place the parts in most frequent demand at the most convenient height. Arrange each make of parts according to the same plan. This method will allow parts to be placed in the bins with reference to the size and weight of the parts. The variety of parts carried does not require parts lists finders marked up with bin numbers. Service is always delayed by the finder list not being posted to agree with the last change of arrangement.

(c) Entries on the stock cards will be made from the requisitions. When the amount of stock on hand for any parts shows on the stock card as being below the safe minimum, the stock should be checked and a requisition placed for additional stock.

73. The officers in charge of Service Parks must anticipate the requirements for unit assemblies and largs parts by carefully noting copies of the inspection reports sent in from operating units. These inspections will prove of great benefit to the service if proper attention is paid to them. Service Park officers will aid truck company officers by information concerning defects in vehicles.

74. All requisitions will be made on M. T. C. Form 160 and forwarded to the M. T. O. under whom the park is operating. Follow instructions if you desire to place the responsibility for delay on other shoulders than your own.

75. The procedure to be followed by service parks in connection with company administration, convoy discipline, etc., is outlined in other sections of this manual.

76. Under the pressure of necessity, the output of a service park may be temporarily greatly increased by doubling or trebling the number of hand tool mechanics from any available source.

OVERHAUL PARKS

77. The function of Overhaul Parks has been stated in the first part of this chapter.

78. All types of parks are designed with a fair degree of flexibility to care for overloads and underloads of reasonable duration. Roughly, each full sized overhaul park will care for 4000 general cargo trucks plus the number of other vehicles in the proportion fixed by Tables of Organization of April 2, 1918. This contemplates a twelve (12) months' overhaul basis except for a three (3) months' overhaul on motorcycles.

79. Overhaul parks will be operated and controlled by S. O. S. personnel. Typically an overhaul park will handle certain makes of vehicles. When standardization within an organization becomes a fact, overhaul parks will be affiliated with organizations similarly equipped.

80. Overhaul parks should be located an average distance of 30 miles behind the fighting line plus or minus 50% variation depending upon topography and circumstances. Forty miles with the same variation is proper behind thinly held sectors. Parks near the minimum distance would have to be backed by other more distant parks. Distance, rather than motor concentration, becomes the predominant factor when the radius of influence of an overhaul type of park is stretched to 200 miles.

81. The standard park is subdivided so as to operate whenever the exigencies of the service require quarter or half sized groups. This provides the necessary flexibility as to the personnel, capacity, and semi-mobility to permit maintaining suitable units at all points in the S. O. S. from the boundary of the zone of the Armies to the Base Ports.

82. Capacity and personnel qualifications of repair units are fixed in approved Tables of Organization.

83. The principles of operation prescribed are:

(a) All jobs enter the park for repair at a test and inspection department, where a test is conducted and a work order is made out. If the repairs to be made are slight, the work is done by the men in the test and inspection department without interfering with the regular work of other departments.

(b) If the job is not disposed of under (a), it is placed on the wash rack. Inspection having classified it, it is sent to the service park, if a service job, or to the body repair yard for removal of body and then to the chassis department for disassembling into its component units.

(c) The separate units are sent to the tear down, wash and inspection departments with a tag bearing the same date as the work order and additional information in order that the department receiving the work will know what is to be done.

(d) After the tear down, wash and inspection department work is completed, the parts go forward to the various departments where the actual repair work is done.

(e) When the work is completed in the several unit overhaul departments, the units are returned to the chassis department where in principle they are assembled into the chassis from which they were removed.

(f) If delay is caused by the lack of parts to complete any assembly, a complete new or rebuilt assembly will be substituted.

(g) When the work is completed by the chassis department the vehicle is turned over to the test and inspection department for road test and final adjustments.

(h) Requisitions for all spare parts drawn from stock will show the work order number and such other data as is necessary, and when the work on a vehicle is finally completed, all requisitions and time cards are attached to the original work record for file and for the purpose of making periodical reports.

(i) Reports of repair work will be rendered weekly on M. T. C. Forms 144 and 144-A in accordance with instructions on the forms.

(j) Details of the internal paper work are covered by special bulletins.

84. The final decision as to whether or not a vehicle sent to an overhaul park for repair is within the scope of the park rests with the officer in charge of the park, whose decision will be based on the following:

(a) A vehicle will not be accepted for repair or overhaul unless it can be put in reliable condition by using the majority of the parts of the vehicle.

(b) Overhaul work will not be undertaken which requires extensive manufacturing of parts.

(c) Salvage by a reconstruction park is advisable when overhaul cost will exceed 30% of the first cost of the delivered vehicle.

85. Vehicles beyond the scope of these parks will be evacuated to the Main Reconstruction Park as salvage.

RECONSTRUCTION PARK

86. The functions of a reconstruction park are the remanufacture of motor vehicle units, assemblies or parts not fit for further service if merely overhauled, and the prompt return to supply depots of reconstructed items for reissue. Parks of this type will also reconstruct wrecked vehicles evacuated as salvage, and will further utilize salvaged material for the manufacture of new parts in other than their original form.

87. Ordinarily, all work entering the reconstruction park will pass through the salvage section of the park first, which section will determine whether the vehicle or part shall be scrapped or rebuilt.

88. All vehicles rebuilt will, upon completion, be reported to the office of the D. M. T. C. as ready for issue and will be reissued from that office.

89. A reconstruction park operates directly under the Office of the D. M. T. C., and will render such periodical reports to the same as may be required.

RECEPTION PARKS

90. Reception parks are established at each base port through which vehicles are received. These parks consist of the necessary personnel, grounds, shop buildings, and equipment for receiving, assembling, placing in running condition, registering, and issuing all types of motor vehicles.

91. The lay-out of a reception park shall be such that the progress of a new vehicle from the time it enters until the time it leaves shall be a continuous flow in a given direction.

92. The following routine of operations is authorized in principle for all reception parks:

(a) As soon as a vehicle arrives in a reception park it will be uncrated and set on its wheels. A registration number will be assigned to it. This number will be shown on tag attached to the vehicle. Blocks of registration numbers will be periodically forwarded by the D. M. T. C. Upon the assignment of the registration card, M. T. C. Form 139, a, b, or c, will be filled in, in duplicate, one copy of which will be forwarded to the D. M. T. C., and the other retained on file. A log book, M. T. C. Form 149, a, b, or c, will also be filled in for the vehicle and held in the office until the vehicle is issued.

(b) All tools, accessories and equipment coming with the vehicle are taken off and stored until such time as the vehicle is ready for issue.

(c) The vehicle will then move to the shop section of the park, where it is assembled and all mechanical work done.

(d) From the mechanical assembly section the chassis will be sent to the road for test and final adjustments.

(e) After the chassis has been put in perfect operating condition, it will receive the body and have a registration number stenciled on the body and hood, in accordance with instructions relative to the classification, numbering and marking of vehicles, as given in Chapter XV of this manual.

(f) Complete vehicles will be maintained in perfect condition in a *Ready for Issue* section of the park until disposition is given from the Office of the D. M. T. C.

(g) When disposition of a vehicle is given, the equipment, vehicle supply card and mileage record, M. T. C. Form 150, and Log Book, M. T. C. Form 149, a, b or c, are placed on the vehicle and receipted for by the driver taking the vehicle, on M. T. C. Form 146, a, b or c.

93. The issue of vehicles will be accomplished on Memorandum Receipt, M. T. C. Form 101, made out in accordance with the instructions printed thereon.

94. A daily written report of all vehicles received, issued, on hand, and R. F. I., will be made to the D. M. T. C. on M. T. C. Form 135. In addition to this report, other written and telegraphic reports will be rendered in strict accordance with instructions issued from the Office of the D. M. T. C.

CHAPTER V.

SALVAGE SYSTEM

GENERAL

95. Motor Transport material, parts and supplies, because of their utilizing the highest grades of materials and requiring expensive manufacturing operations, constitute a class of equipment, the value and constant shortage of which demand the best efforts toward salvage.

96. In no phase of motor transportation can individual effort earn a greater reward than in real rather than false salvage. In a sense, every officer and man in the army is charged with salvage. His dependence upon successful operation of salvage is very, very apt to exceed his fidelity to his obligation. Dodging the responsibility makes you a shirker and a bad example.

97. M. T. C. salvage will include all parts of motor vehicles, their accessories or equipment; also tools and materials for their maintenance—regardless of whether or not they are in a condition of direct utility. Even though their condition may appear worthless, such material will be regarded as salvage within the meaning of these instructions. When you mix good parts with unserviceable parts, you are defeating salvage by delaying it.

98. Examples of certain forms of salvage are given to indicate their value. Platinum in any form is of special value. Next come high-speed tool steels, bronzes, brasses, aluminum, etc. Broken castings can be pieced together and welded. Missing parts of castings can be graft-welded from other wrecked castings. Failing these, castings can be turned back to foundries for recasting. Broken gears, shafts, axles, etc., can be utilized to relieve shortage on expensive special alloy steels. Non-ferrous metals of every description are valuable in any quantity. Such articles as boxes, crates, bags, enemy motor material, rope, wire, tarpaulin, leather, curled hair, rubber, oil in crankcase, filings, chips, metallic shop sweepings, spark plug porcelains, glass, electrical connections, screws, nuts, bolts, washers, and studs—are only mentioned to emphasize the principle that all M. T. C. material has a salvage value.

99. Material such as storage batteries, magnetos, springs, commutators, valves, push rod guides, steering arms, or any other parts or group of parts should be sent to salvage without delay in separate containers and specially marked.

100. Salvage will be so packed for evacuation to reconstruction park as to guard against further damage to reclaimable material, such as carburetors, coils, lamps, plate glass, spark plug porcelains, etc.

101. Oil salvage originating from any source will be carefully collected, strained free of bulky impurities, such as water, pieces of metal, etc., marked plainly "Oil for Salvage" and turned over to the local Quartermaster for shipment to *U. S. Refinery in France.*

102. In no event, will any attempt be made to build up a supply of local spare parts or replacements by the process of "stripping" vehicles or assemblies. Disciplinary action will follow violation of this rule.

EVACUATION OF MOTOR TRANSPORT SALVAGE

103. The Motor Transport Corps officer detailed as an assistant to the Chief of the Salvage Service, will co-operate with the Motor Transport Officers of Armies, Corps, Divisions and S. O. S. Sections in providing channels for the prompt disposition of salvage. Special effort will be made to have vehicles engaged upon the supply of spare parts return to overhaul parks or reconstruction parks with salvage.

104. Every effort should be exercised to return salvage to use by the quickest channel in point of time. To this end it will be forwarded along the best lines of communication, congestion considered, to such points, particularly reconstruction parks, as may be designated from time to time in orders.

105. Inasmuch as speed of return to a useful purpose is the end to be attained, special care must be given to the following:

(a) Prompt movement.

(b) Best field classification possible.

(c) Careful marking of parts with tags, and of containers by tags or stencilling.

(d) Protection of salvage against damage or stripping of vehicles and assemblies by "hoarders" in transit.

(e) Use by service parks and overhaul parks of parts requiring little or no repair.

(f) Avoidance of hoarding.

(g) Prompt handling of repair processes.

(h) Prompt return to main and advanced supply depots.

(i) Avoidance of wide distribution of repaired articles in small stocks (this is hoarding in another guise).

(j) Prompt filling of requisitions.

CHAPTER VI.

M. T. C. TRAINING

106. A Motor Transport Corps School (M. T. C. School No. 1) has been established for the training of officers and men of the A. E. F. engaged in the operation and repair of motor vehicles. Its facilities are not limited to the personnel of the Motor Transport Corps alone. This school specializes in the instruction of officers, officer-candidates and non-commissioned officers, only such numbers of drivers being admitted as can be handled without interference with the other courses being given.

107. In addition to this training center, specialized schools have been established in the Depot Divisions for the instruction of mechanics and of chauffeurs. These schools will be devoted very largely to the training of replacement personnel.

108. In the training areas of Divisions arriving from the United States, schools for the instruction of Motor Transport personnel will also be established, such instruction to conform in principle to that outlined below for M. T. C. School No. 1, with the exception that ordinarily chauffeurs only will be trained.

109. Other schools will be established in such numbers, for such special purposes and in such localities as the interests of the service may require.

110. Personnel for M. T. C. Schools is ordinarily obtained from Depot Divisions, from M. T. C. personnel arriving from America, and from formal application, in accordance with M. T. C. Bulletin 31. When practicable, all Motor Transport Corps personnel arriving from the United States will be trained in M. T. C. Schools before assignment to duty in the field.

111. M. T. C. School No. 1 is divided into two Departments—Department of Field Service and Department of Park Service. Each Department is divided into an Officers' section (for officers and officer-candidates), and an enlisted men's section. Training in each section is outlined below. This same system of training is adhered to in the specialized schools for chauffeurs and mechanics.

(A) DEPARTMENT OF FIELD SERVICE

Officers' Section.—Nomenclature, operation, care, adjustment and simple repairs of motor vehicles to include only elementary principles of automobile engineering; school of individual driving; school of convoy driving; rules of the road; map reading; map problems in operating convoys; loading and unloading of material and personnel; parking; relations with French officials; organization and functions of the Motor Transport Corps, infantry instruction to include school of the Battalion; records and reports; administration. Length of course 288 hours (six weeks).

Enlisted Men's Section.—(Drivers' Course.) Nomenclature, operation, care adjustments and simple repairs of motor vehicles; individual driving; rules of the road; signals; convoy driving; care of motor, carburetor and running gear; springs, wheels, tires and body; oiling, greasing and cleaning; infantry drill. Selected men will be given additional instruction in driving touring cars. Length of course 96 hours (two weeks).

Non-Commissioned Officers' Course.—(For men who have qualified with highest ratings in the drivers' course and have shown aptitude for command). Map reading; convoy running; loading and unloading; parking and camping; records and reports. Length of course 96 hours (two weeks).

Motorcycle Course.—Instruction in the operation and repair of motorcycles will follow, in general, the outline given above for other motor vehicles. Length of course: for officers, 192 hours (four weeks), for enlisted men, 96 hours (two weeks).

Officers' Section.—Principles of design and construction of gas engines and motor vehicles, including motorcycles; practical shop work, to include use of machine and bench tools; forging; brazing; soldering; repairs of solid and pneumatic tires; tests of oils and gasoline; principles of lubrication; shop management; organization and functions of Motor Transport Corps, especially with relation to repair parks (service, overhaul, reconstruction) and Main Supply Depot; infantry drill; map reading and convoy running, as in Officers' Section Field Service, but of limited extent. Length of course 288 hours (six weeks).

Mechanics' Section.—(Only men who are already mechanics by trade or possessing exceptional mechanical ability will take this course). Dismounting vehicles, engines and all auxiliary parts; assembling same; adjusting; tests; use of machine and bench tools; forging; brazing; repairs of solid and pneumatic tires; entire course as practical as possible. Length of course 288 hours (six weeks).

112. Specialized courses, as in oxy-acetylene welding and tire-press work will be instituted as the need for such personnel arises.

113. The attached charts cover the schedules maintained for the training of officers and officer-candidates of both Park and Field Service, and of mechanics.

114. The blank forms used in the various M. T. C. Schools are discussed in detail in Chapter XV of this manual.

115. Application to attend M. T. C. School No. 1 is made in accordance with the provisions of M. T. C. Bulletin 31, copies of which may be obtained by application to the Director Motor Transport Corps.

SIX WEEKS

COURSE FOR 100 OFFICERS

DEPARTMENT OF FIELD SERVICE

	8:00-9:00	9:00-10:00*	10:00-11:00	11:00-12:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00
1st DAY	INFANTRY DRILL	THEORY OF AUTOMOBILE ENGINEERING	PRACTICAL AUTOMOBILE ENGINEERING	STUDY	ADMINISTRATION		LECTURE ON FIELD WORK	
2nd DAY	"	"	"	PREPARATION FOR CONVOY	CONVOY			
3rd DAY	"	"	"	STUDY	ADMINISTRATION	STUDY	LECTURE ON FIELD WORK	
4th DAY	"	"	"	PREPARATION FOR CONVOY	CONVOY			
5th DAY	"	"	"	STUDY	ADMINISTRATION		LECTURE ON FIELD WORK	
6th DAY	"	"	"	PREPARATION FOR CONVOY	CONVOY			

* 1st & 2nd Week - Nomenclature, Operation & Care - 3rd & 4th Week - Adjustments - 5th & 6th Week - Simple Repairs (Practical Work)

W.M.

COURSE FOR 50 OFFICERS
6 WEEKS
DEPARTMENT OF PARK SERVICE

HOURS	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00
1ST FOUR WEEKS 1ST DAY	INFANTRY DRILL	SHOP WORK		ADMINISTRATION	THEORY OF AUTOMOBILE ENGINEERING		PRACTICAL AUTOMOBILE ENGINEERING	STUDY
2ND DAY	"	"	"	"	"		"	
3RD DAY	"	"	"	"	"		"	"
4TH DAY		"	"	"	"		"	"
5TH DAY	"	"	"	"	"		"	"
6TH DAY	"	"	"	"	"		"	"
5TH WEEK 1ST DAY	PREPARATION FOR CONVOY	CONVOY			"		"	"
2ND DAY	INFANTRY DRILL	SHOP WORK		ADMINISTRATION	"		"	"
3RD DAY	PREPARATION FOR CONVOY	CONVOY			"		"	"
4TH DAY	INFANTRY DRILL	SHOPWORK		ADMINISTRATION	"		"	"
5TH DAY	PREPARATION FOR CONVOY	CONVOY			"		"	"
6TH DAY	INFANTRY DRILL	SHOP WORK		ADMINISTRATION	"		"	"
6TH WEEK 1ST DAY	PREPARATION FOR CONVOY	CONVOY			"		"	"
2ND DAY	INFANTRY DRILL	LECTURE ON FIELD WORK		ADMINISTRATION	"			
3RD DAY	PREPARATION FOR CONVOY	CONVOY			"		"	"
4TH DAY	INFANTRY DRILL	LECTURE ON FIELD WORK		ADMINISTRATION	"		"	"
5TH DAY	PREPARATION FOR CONVOY	CONVOY			"		"	"
6TH DAY	INFANTRY DRILL	LECTURE ON FIELD WORK		ADMINISTRATION	"			

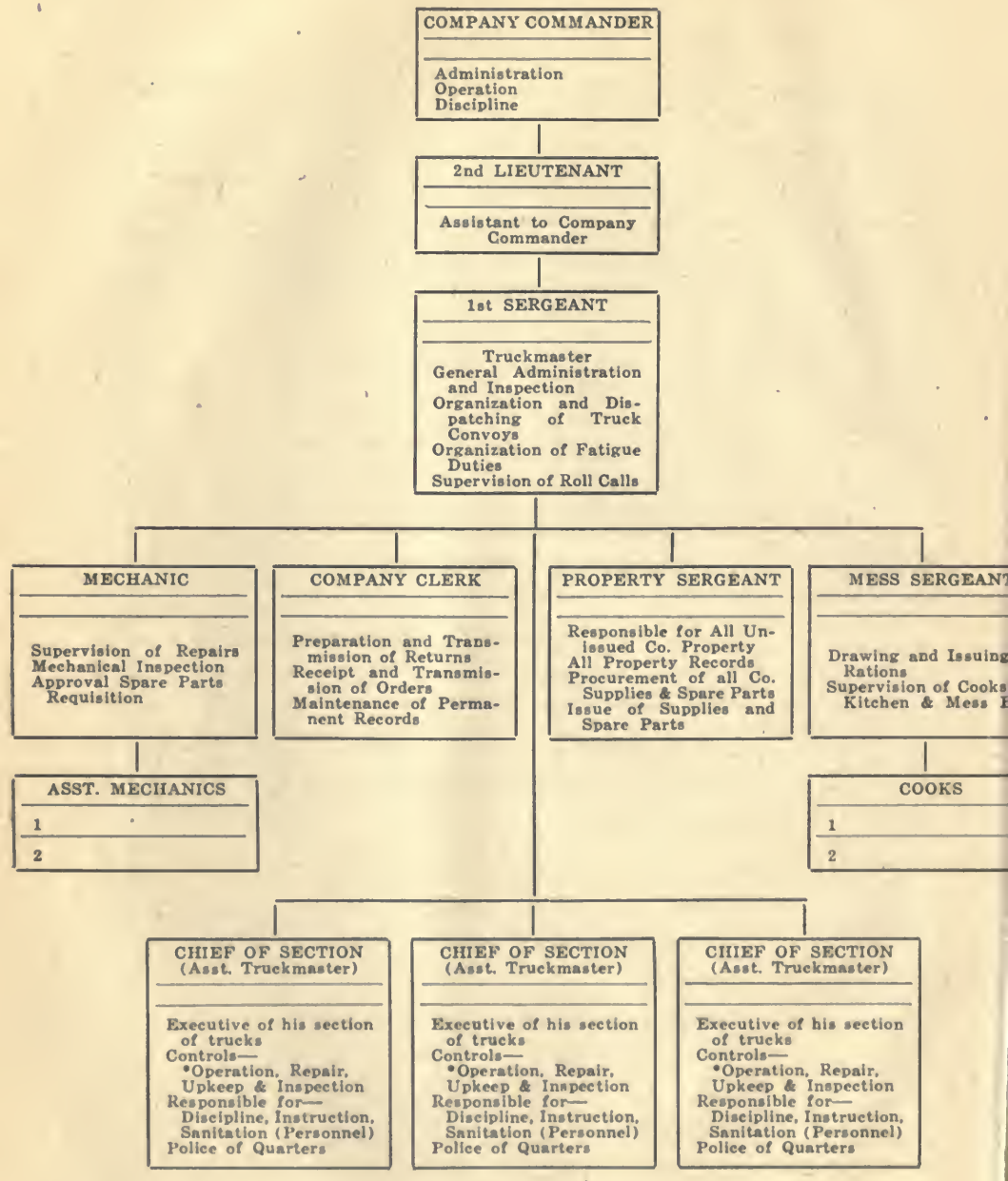
M.T.S. SCHOOLS

MECHANICS COURSE — DEPT of PARK SERVICE

		8-9	9-10	10-11	11-12	1-2	2-3	3-4	4-5	REMARKS
FIRST AND SECOND WEEKS	1ST DAY	Preliminary lecture (1st Week)	Theory of Automobile Engineering		Lecture on Field Work	SHOP WORK Lecture In Chassis Room		Assembly and Disassembly By Men		Lecture from 1 to 3 Supplements Lecture of 9 to 11
	2ND DAY	Infantry Drill	"		"	"		"		
	3RD DAY	"	Road & Convoy Work			"		"		
	4TH DAY	"	Theory of Automobile Engineering		Lecture on Shop Work	"		"		
	5TH DAY	"	"		"	"		"		In Hours 9-11 Particular attention is paid to methods of upkeep and maintenance
	6TH DAY	"	"		"	Study		Examination		
THIRD, FOURTH, FIFTH AND SIXTH WEEKS	1ST DAY	Infantry Drill	SHOP WORK			SHOP WORK				Each man Specializes in Shop work according to his assigned course
	2ND DAY	SHOP WORK				"				
	3RD DAY	"				"				
	4TH DAY	"				"				
	5TH DAY	"				"				
	6TH DAY	Infantry Drill	SHOP WORK			FINAL EXAMINATION				Final Examination in the last week only

LMH

MOTOR TRANSPORT COMPANY ORGANIZATION



•Includes Responsibility for Drawing Gasoline, Oil and Grease.

NOTE—THIS IS A TYPE ORGANIZATION AND IS INTENDED MERELY AS A GUIDE.

CHAPTER VII.

THE MOTOR TRANSPORT COMPANY

GENERAL

116. This information is furnished as a result of past experience in the field, with the intention of standardizing the operation and administration of a motor transport company. It does not attempt to specify every detail, but leaves much for the individual judgment of the commander; but the *rules* as set down here will be regarded as being *rules*, not as suggestions alone, and are for the guidance of privates and non-commissioned officers, as well as for company commanders.

117. The company commander should endeavor to standardize all company procedure. Unless all duties and functions are clean-cut and clearly defined, a motor transport company will become cumbersome and inefficient.

118. The development of company spirit, or "esprit de corps;" must be fostered in every way possible. No one factor can be of more value in maintaining good discipline in camp and on the road. See that the men are neat in their personal appearance and that their vehicles are at all times clean. Men can be led to take great pride in their trucks and in their work. The development of "esprit de corps" depends largely upon the personality of a company commander and the spirit which he instils into his non-commissioned officers and men. A company is a mirror which reflects the ability of its commander. There is no better measure of a company commander's efficiency than the quality of training and discipline manifested by the members of his company.

119. The importance of our relations with the Allies must not be overlooked. Differences in temperaments and points of view sometimes lead to friction between persons of different races, but company commanders should take measures immediately to overcome any friction that comes to their knowledge, and thus maintain the good relations that now exist. Company commanders should impress the importance of this subject upon all their men, especially upon their non-commissioned officers.

HOW TO ORGANIZE A MOTOR TRANSPORT COMPANY

120. In organizing a motor transport company, the principal problems involved may be grouped in two classes, administrative and mechanical.

121. Upon receipt of his orders, the officer who has been designated to organize a motor transport company should assemble his subordinates, namely, his truckmaster, assistant truckmasters, mechanic and assistants, clerk and mess sergeant and non-commissioned officer in charge of property. If these men have not been so designated in the order, tentative appointments should then and there be made. Outline your instructions to these men and announce your policy.

122. If quarters have not already been assigned your company (either camp or barracks), ascertain the space allotted your company, take your subordinates there, point out the section assigned to the camp and locate the park for your trucks. This park should be adjacent to the camp. Make requisition on local quartermaster for tentage and bedding, mess and kitchen outfit, and sufficient gas, oil, cup grease and such other supplies as may be necessary for the immediate maintenance of the company for a limited time. Give this to the property sergeant, tell him to take a truck and go to the warehouse, or depot, and draw same. Meanwhile, instruct the clerk to prepare a ration return for your signature. Get this approved by the commanding officer and turn it over to the mess sergeant. Give him a truck and instruct him to go to the subsistence depot and draw his rations. During this talk with your executive "staff," designate the

location of the latrine and bath and make details to construct the same. Explain briefly the requirements as to dress, conduct, cleanliness and sanitation, as well as mechanical operations of trucks, speed limits, loading, etc. A tent or building should, if practicable, be set aside for use as an office. The clerk should be instructed in starting his records, beginning with the Morning Reports. The clerk should be told of the importance of the company records, shown what they are and how to submit them. The mess sergeant should be instructed regarding the ration, its components, method of making issues, sales and savings, sanitation of his kitchen and mess hall. The man in charge of property should be impressed with the importance of his duties and of requiring a complete record of each property transaction, in that the interests of the government, as well as of the commanding officer, may be protected. This may best be done by requiring a signed receipt for everything issued, either to a section or to an individual.

123. The above details will require the greater part of one day and nothing else should be done until the company is completely housed and adequate arrangements have been made for subsisting the company. If cooks have not been found, either secure them, or make adequate messing arrangemnts for your personnel.

124. With your truckmaster, the assistant truckmaster, the mechanics and the property man, proceed to check up trucks and other property with invoices already received.

ORGANIZATION OF A MOTOR TRANSPORT COMPANY

(See approved Table of Organization)

125. A motor truck company is normally organized into three sections of nine trucks, each section under command of an assistant truckmaster. The service trucks, i. e., tank-trucks, etc., are usually kept under the immediate orders of the truckmaster as they do not form an integral part of the cargo sections. When the company is not operating in convoy, the service trucks may be assigned to cargo work, and in such cases should be attached to sections.

126. The composition of a Motor Transport Company is shown in Tables of Organizations. The amount and kind of equipment varies with the duty to which the company may be assigned. Normally, for active field service, the equipment will consist of 32 vehicles. When the company is operating at a depot establishment or more or less permanently in a district of the S. O. S., the vehicle equipment may be increased to 65, as on this class of work it is not necessary to have two drivers with each vehicle.

ADMINISTRATION

127. The company commander is responsible for the operation, supply and discipline of his command. He is assisted by the 2nd Lieutenant. The 1st Sergeant is the executive of the company and sees that all orders are properly carried out. Each chief of section is responsible for the discipline of the men in his section and for the proper operation and upkeep of the equipment assigned thereto. All orders or instructions to various members of a section should be given through the chief thereof, who should be held rigidly accountable for the condition and operation of his section.

128. The assistant mechanics are under the supervision of the mechanic, who should be under the immediate supervision of the 1st Sergeant. They perform such mechanical work as the company commander may direct.

129. The mess sergeant has general charge of the mess and the cooks are under his supervision. The property sergeant has control of materials and supplies, and is responsible for their proper issue. The company clerk keeps all records of personnel, property and operation, and performs such other duties as the company commander may require.

130. In each company, the division of responsibility with reference to operation, upkeep and repair of the mechanical equipment, should be established by the company commander and published in a company order so that each member of the company should be thoroughly familiar therewith.

The various duties outlined above are specified in more detail below:

DUTIES

131. *COMPANY COMMANDER.*—He is responsible for everything connected with the operation, maintenance and discipline of his company. He should bear constantly in mind that his company is a transport organ in the service of the United States, and in making a decision on a course of action, he should realize that its mission is determined by that fact. In addition to seeing that all members of his command properly perform their duties, the following points are noted that call for special attention on his part:

(a) Make the company a disciplined and military outfit. Develop an "esprit de corps." Make each man realize that he is an important unit of a military formation, and that the work his truck does is just as essential in beating the enemy as the gun of an infantry man. For this reason, he should be just as soldierly, and must take care of his truck as carefully as an infantry man takes care of his gun.

(b) Prevent speeding of trucks. Speeding is a practice very difficult to prevent, but one very destructive to truck mechanism, extremely conducive to accident, and markedly destructive to discipline. Punish all violations of speed orders with a heavy hand. Trucks are built for strength, not speed.

(c) See that all motor governors are regulated in accordance with specific requirements of the book of directions issued by the truck manufacturer. Severely punish any one opening up governors. This is a common practice, and very hard to stop; but it is very destructive to motors by permitting them to run at excessive speeds.

(d) Keep accurate check on gasoline and lubricating supplies. It is a favorite practice to use gasoline for many things except fuel and there is a great temptation to dispose of same unlawfully. The gasoline supply should be under immediate supervision of a designated man, who should make a record of all receipts and issue. Check warehouse or Quartermaster receipts against record of issue of this man, as well as record of consumption as taken from driver's report. Be careful in the minute details and you will not be troubled by the larger ones. This care of property extends to all tools and equipment. Take individual checks of this equipment, at frequent intervals, to assure not only that your equipment is complete, but also to detect carelessness or theft. Remember that automobile and motor parts are high priced and extremely saleable, and that if some of your men realize that your supervision is lax, they will sell your truck under your nose.

(e) Do not allow a motor to run while the vehicle is at rest longer than a period of one minute. This is a very common practice and hard to stop. Drivers object to the somewhat difficult work of cranking a motor, and will avoid doing it whenever possible. This practice, in addition to wasting gasoline, may lead to serious results when a company is operating in field service, by the gasoline supply becoming exhausted before the time counted upon.

(f) Never allow a cut-out to be used, and keep mufflers in working order at all times. The cut-out gives less than a fraction of a per cent. more power. The noise made when the cut-out is open or the muffler not properly working is a nuisance to everyone, and, in addition, the exhaust of the gases, striking the roadway direct, raises excessive clouds of dust. This is another favorite practice with drivers which must be severely punished in order to be stopped.

(g) Frequent occurrence of accidents indicates poor discipline. In order to keep down the number, severe measures must be taken with the drivers. Always put the burden of the proof of the unavoidability of an accident on the driver. Do not relieve him of responsibility unless he proves beyond the shadow of a doubt that the accident was not his fault. If you make it known that your policy is never to give the driver the benefit of the doubt, you will find that accidents will be of rare occurrence.

(h) Always remember that your motto should be "Service First." Do not lose sight of the mission of your company by getting too interested in the working of the truck mechanism.

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132. *SECOND LIEUTENANT.*—This officer is the direct assistant of the company commander, and has such duties and responsibilities as are given him by the company commander.

133. *FIRST SERGEANT.*—He is the executive of the company. He sees that all orders, regulations, and other requirements are properly carried out; that the men perform their duties properly; and reports to the company commander any cases of neglect or violation of orders requiring disciplinary action. He should be a man chosen more for his administrative and executive ability and his efficiency in handling men than for his mechanical knowledge. The mechanic may well be chosen for his ability as a mechanic irrespective of his ability to handle men, but the first sergeant should be a man of force, as his prime duty is to maintain discipline for the efficient operation of the company.

134. *CHIEFS OF SECTIONS.*—Each chief of section is responsible for the discipline, instruction and all other matters pertaining to the personnel of his section; for the operation, repair and upkeep of the equipment assigned thereto. He is the intermediary between the men of his section and the first sergeant or company commander. His supervision extends to all the details connected with his section, including police and sanitation of quarters, seeing that his men are provided with the necessary equipment and clothing. All orders for his section, either to the various members of his personnel or to the units of his equipment, should be given to him. He should assure himself that his section is in proper condition at all times by making regular and systematic inspections of his men and equipment. He should examine all his vehicles on their return from work, and see that the drivers have taken proper care of them and that the proper repairs are made. In his absence, for any cause, a suitable man should be designated to perform his duties.

135. *DUTIES OF MECHANIC AND ASSISTANT MECHANICS.*—The practice in reference to mechanics varies in different companies according to local circumstances. The two general systems are: (1) the chief mechanic and assistants are under direct control of the first sergeant and are not assigned to a given section; (2) each mechanic is assigned to a section and comes under the control of the corresponding chief of section. In either case, however, the chief mechanic should be held generally responsible that proper repairs are made. He is in charge of the repair and tool equipment pertaining to the organization. He should sign for the tool equipment and issue it to assistant mechanics on proper receipt. He should be held responsible that this equipment is properly kept up, and that any shortage, by damage, loss, etc., is properly made up. Normally, he should see that the assistant mechanics are properly qualified or should instruct them in their work. When mechanics are assigned to sections, this duty falls upon the chiefs of sections. In order to properly perform their duties the mechanics and assistant mechanics should be thoroughly familiar with the instruction book issued by the maker of the vehicles furnished the company.

136. *COMPANY CLERK.*—He has charge of all records, reports and correspondence of the company. As he is habitually called upon to notify members of the company as to orders and instructions received, or call upon them for the rendering of prescribed reports, and in consideration of other incidents where he must exercise authority, he has the rank of sergeant. Other duties for him are prescribed by the company commander according to local conditions.

137. *PROPERTY SERGEANT.*—He is responsible for all supplies and equipment not actually issued to individuals, and will keep the necessary records therefor. He is responsible, moreover, that all issues of property are properly receipted for by the persons responsible. He keeps the property under his charge clean and in proper order, and should have a list up to date of all property and its disposition. All dealings with the quartermaster or supply officer, not requiring the personal intervention of the company commander, should be carried on by him.

138. *MESS SERGEANT.*—He has direct charge of the mess hall, kitchen, and all matters pertaining thereto, including supervision of the cooks or other men working in the kitchen. He draws the rations, sees that they are economically used, makes up bills of fare, sees that the kitchen, mess hall and premises are clean and sanitary, and that all orders in reference thereto are properly carried out.

139. *DRIVER.*—He keeps his vehicle and its equipment clean and in proper repair and working order. In order to do this, he utilizes his spare time while not on duty to do the minor work required thereon. He should be especially required to attend to the proper lubrication of all parts and truck mechanism, and to report promptly to his section mechanic any defect noted or repair needed. In transporting material or supplies, he will see that the vehicle is not overloaded and that the cargo is properly loaded and lashed. Ordinarily he is responsible for its safe delivery. He should be familiar with the mechanism of his vehicle and its proper operation, and for this purpose he should be thoroughly familiar with the contents of the instruction book issued by the makers of the vehicle. He should be required to wear proper uniform when driving.

140. *ASSISTANT DRIVER.*—He will aid the driver in all of his duties as to care and loading trucks, and in convoy will watch for all signals and communicate them to the driver. He will repeat necessary signals to the vehicle following, and will relieve the driver on long convoys.

141. *COOKS.*—Cooks shall prepare all food under the direction of the mess sergeant.

RECORDS AND REPORTS

142. A thorough knowledge of all company records and reports required by Army Regulations and the M. T. C. is indispensable to the company commander. *As in every other branch of his work, he must be capable of doing the work himself in order to instruct his clerks and office personnel in every detail which arises.*

143. It is obvious that the clerical work of a company in the field must be reduced to a minimum, yet equally apparent that some reports and records are absolutely necessary to keep the company in contact or liaison with larger units, to form the basis for the supply of material and personnel, and in short, to carry on the company's business. For this reason the company commander must be thoroughly familiar with the procedure for all correspondence, all matters requiring disciplinary action, promotion, reduction, issuing of orders, and matter relating to property and supply. Property *accountability* has been suspended for all company organizations of the American E. F. in the field, but this must not be construed to mean that *responsibility* has in any way been removed. Although he does not have to make out property returns for the company property, it nevertheless is essential that the company commander keep accurate and complete records of all property received, issued, and on hand, and that he take conscientious care of all property coming into his possession.

The following records and reports are required of a Motor Transport Company. Most forms have detailed and explicit instructions printed on them. These printed instructions have the force of orders. M. T. C. Forms are discussed in detail in Chapter XV.

PERSONNEL

144. The service record (Form 29, A. G. O.) is the individual record of service of each enlisted man. The record is opened upon enlistment or re-enlistment of the soldier and goes with him his entire period of service. The Company Commander is responsible for the proper entries on service records.

145. Blank forms (A. G. O.) for "honorable discharge," for "discharge," and for "dishonorable discharge" are kept in personal custody of the Company Commander. See A. R. 150.

146. Monthly returns (Form 30, A. G. O., M. T. C. Form 143,) prepared and rendered as per printed instructions on each form.

147. *MUSTER ROLLS* (Form 61-61a, A. G. O.).—The Muster Roll is made out by the Company Commander on the 1st day of February, April, June, August, October and December. It is one of the most important of army papers and forms part of the archives of the War Department. Too much care cannot be given to its preparation. Form 61 is the cover sheet of the report and can be

used alone for very small detachments. Form 61a is an insert or an additional sheet to be inserted in Form 61 for larger detachments or companies. Full directions for the preparation and disposition of the rolls are printed on the cover, Form 61. Separate Muster Rolls must be made out for Regular Army, National Army, National Guard and Enlisted Reserve Corps. Muster Rolls are not used in the A. E. F.

148. *RECORDS OF COURTS-MARTIAL* (Form 594, A. G. O.).—Charges preferred against members of an organization are made out on this form, in accordance with printed instructions thereon and the Manual of Courts-Martial. It is prepared in triplicate.

149. *DELINQUENCY RECORD, ENLISTED MEN* (Form 509, Q. M. C.).—On this form is kept a record of offences and punishments of enlisted men. It is in loose-leaf form, a separate sheet used for each man.

150. *MORNING REPORTS* (Form 332, A. G. O.).—Full instructions and models for making out the report are printed on each form.

151. *DAILY SICK REPORT* (Form 332, A. G. O.).—The names of all men reporting for sick-call will be entered on the sick-report. The report will be signed each day by a company officer on the line below the last entry for the day, leaving space for the medical officer to sign on the same line.

152. *DUTY ROSTER* (Form 342, A. G. O.).—Each form contains a model of the correct method with explicit directions for keeping the roster.

153. *PAY BOOKS.*—See G. O. 126, H., A. E. F. 1918.

154. *PAY ROLL* (Form 336, W. D.).—This form will be made out monthly by organization commanders on a basis of the data contained in the individual pay books (G. O. 126, H., A. E. F., 1918).

155. *DAILY REPORT OF CASUALTIES AND CHANGES* (Form 4, A. G. O., D. D., A. E. F.).—Printed instructions on each form.

156. *WEEKLY STRENGTH RETURN* (Form 8, A. G. O., S. D.).—Printed instructions on each form.

157. *CORRESPONDENCE BOOK AND INDEX.*—A record of all correspondence received or sent by a company will be kept in the correspondence book. Correspondence will be filed in chronological order and indexed.

PROPERTY

158. Records of all Quartermaster, Ordnance, and M. T. C. property will be kept by each company commander.

159. *INDIVIDUAL PERSONAL EQUIPMENT SLIP* (Form 637, A. G. O.) —Will be kept in the case of each member of the organization and all property for which organization commander is responsible will be entered on a summary.

160. *REQUISITIONS FOR CLOTHING IN BULK* (Form 213, Q. M. C.).—This form is used by an organization commander in making bulk requisition for his command. It is made out in triplicate.

161. *RATION RETURNS* (Form Q. M. C. 223).—The ration return is used by the company to draw rations. It is made out in duplicate for the ration period (generally a ten-day period). The date required is taken from the daily morning report for the preceding period. The number of persons shown present is the number taken from the morning report of the last day of the preceding period. The quantities of other issues, such as soap, candles, matches, etc., to be issued will be requested in conformity with Army Regulations.

162. *REPORT OF SURVEY* (Form 169, A. G. O.).—This report is used in every case of loss, destruction or damage to government property through any cause whatsoever. It is to be made out in compliance with Army Regulations and instructions printed on the form.

163. *COUNCIL BOOK* (Form 452, Q. M. C.).—A record of all receipts and expenditures pertaining to the company, to be supported by vouchers per instructions printed in the book.

164. *FINAL STATEMENT* (Form 370, W. D., Q. M. C.).—Made out in case of discharge, furlough to reserve, or retirement. These blanks are retained in personal custody of company commander. See A. R. 150.

165. *SOLDIER'S DEPOSIT BOOK* (Form Q. M. C. 41.).—Any soldier may deposit with the Quartermaster a sum not less than five dollars per month to bear interest at the rate of four per cent. per annum. A soldier's deposit book will be furnished to every soldier making such deposit, each deposit made to be receipted for by the Quartermaster and attested by the company commander. The book is kept by the soldier and must be presented with his final statement for payment.

166. *REQUISITION* (Form 160-160a, Q. M. C.).—This form is used for requisition for all supplies and services except those for which a special form is prescribed. Form 160 is the cover and contains directions for its use and making out. Three copies are made, one retained and two forwarded to the Quartermaster or to M. T. C. Supply Depot.

167. The following is a list of M. T. C. forms used in a Motor Transport Company. They are discussed in detail in Chapter XV of this manual:

101	110	118	124	136a	146a	149a	150	162	174
101a	116	119	125	136b	146b	149b	153	172	175
101b	117	123	131	143	146c	149c	160	173	.....

168. *BOOKS AND REFERENCES.*

1. Army Regulations.
2. M. T. C. Manual.
3. Field Service Regulations.
4. Infantry Drill Regulations.
5. Manual of Q. M. Corps.
6. Manual of Courts-Martial.
7. Manual of Army Cooks.
8. Manual for Physical Training.
9. A Standard Hand-Book of Motor-Vehicles.
10. French-English Dictionary.
11. Catalogs, manufacturers' instruction books of cars operated by the company.
12. Maps of the territory served by the company.
13. Copies of all General Orders, Bulletins or Circulars issued by the various headquarters the company is serving.
14. Good loose-leaf memorandum book.

GENERAL REGULATIONS

169. The company commander should use the following as a guide for orders to be drawn up by him and posted for the company:

No alcoholic liquors of any kind are permitted within the limits of the camp.

Rules for sanitation to fit the given situation.

The men will be held *pecuniarily responsible* for loss or damage of any equipment whatsoever, which was clearly due to negligence or carelessness.

The rules of military courtesy briefly outlined.

Establish *definitely* the limits of the cantonment.

Impress upon the men the danger and prevalence of venereal disease, and outline to them General Orders 77, A. E. F., 1917.

Post rule regarding reporting for prophylactic treatment.

Post necessary fire regulations for quarters, kitchen and trucks (particularly the handling of gasoline).

Establish *guard rules.*

170. Inspections of quarters, kitchens, personal equipment, and vehicles should be carefully and regularly made. Inspections under arms should be held weekly, preferably on Saturdays and muster days in the manner prescribed under "Inspection" in this manual.

171. Suggested daily schedule for organizations not assigned to specific duties.

6:00 a. m.	Reveille.
6:15 a. m.	Roll call, followed by short setting-up exercise.
7:00 a. m.	Breakfast.
7:30 a. m.	Camp police.
8:00 a. m.	Morning reports in, and sick call.
8:00 a. m.	Camp inspection; informal on week days and formal on Saturday.
8:15 a. m. to 9:15 a. m.	Drill.
9:30 a. m. to 11:45 a. m.	Work on trucks; miscellaneous work.
12:00 noon.	Dinner.
1 to 5 p. m.	Work on trucks; miscellaneous work.
5:30 p. m.	Supper.
6:00 p. m.	Town leave (not more than 20% of the men per evening, ordinarily).
9:00 p. m.	Taps.

TACTICAL FORMATIONS

172. The tactical formations required of a truck company may be classed generally as formations for road, park and inspection.

(a) Road Formations are discussed in Chapter X of this manual.

(b) *Park Formations.*—The company may be parked either in line, double line, column of sections, or, exceptionally, in column or corral.

1. *Line.*—Trucks are in line normally, with two yards' interval between trucks. A greater or less interval may be ordered by the company commander, according to parking space available.

2. *Double Line.*—Trucks are formed in two lines, trucks facing each other, with a distance of one yard between radiators of opposite trucks, and two yards' interval between adjacent trucks. A greater or less interval may be ordered by Company Commander. This is the preferable parking method for permanent camp or in such places where space or tactical situation permits. In this formation, the trucks are easily accessible from all sides for work, and the motors being together on either side of a central line enables the mechanics to more easily superintend the repair work, as the greater amount that they are called upon to perform pertains to the motor and forward end of the chassis.

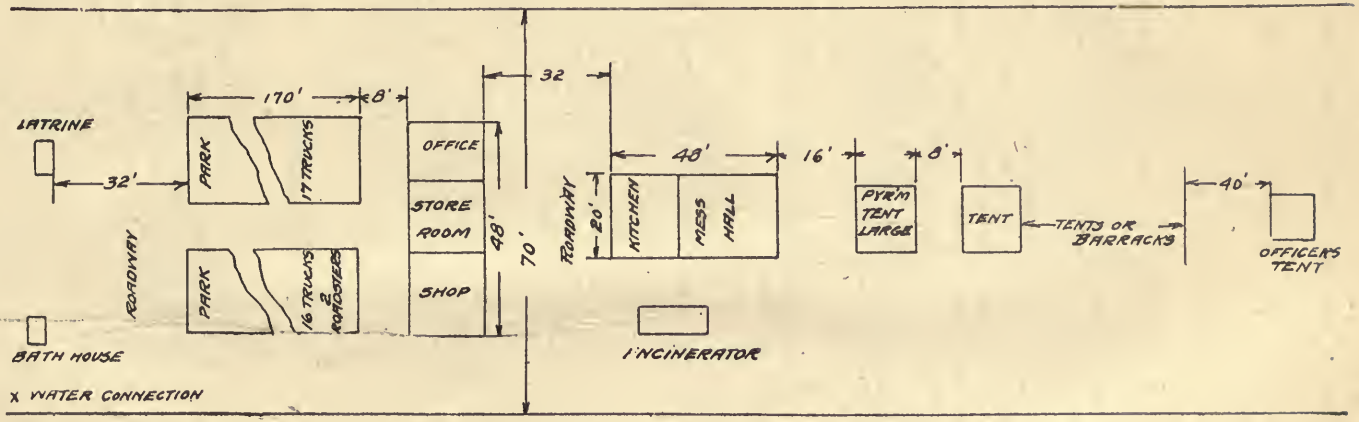
3. *Column of Sections.*—Sections are in line with intervals of two yards between trucks, and distance of fourteen yards between sections. These distances and intervals may be varied at the discretion of the company commander.

4. *Column or Corral.*—(a) Column: This method of parking is used only where sufficient lateral space is not available for one of the other formations. This would be the case when the company is in bivouac along a road not permitting a line formation. In this case, the distance between trucks should be reduced to a minimum, not over one yard at the most. (b) Corral: The trucks may be parked so as to form a closed corral for defense. This is an exceptional method and very rarely resorted to.

(c) *Inspection Formations.*—Discussed in Chapter XII of this manual.

CAMP, BIVOUAC AND BILLETING

173. The formal permanent camp of a truck company should be laid out as indicated in diagram on following page.


LATRINE
32'
PARK
170'
8'
17 TRUCKS
OFFICE
STORE ROOM
SHOP
48'
70'
32
ROADWAY
PARK
16 TRUCKS 2 ROADSTERS
BATH HOUSE
X WATER CONNECTION
ROADWAY
20'
48'
KITCHEN
MESS HALL
16'
8'
PYR'M TENT LARGE
TENT
TENTS OR BARRACKS
40'
OFFICER'S TENT
INCINERATOR

174. The camp of a truck company should approximate the above as far as local conditions permit. A distance of two truck lengths is sufficient to enable a truck to enter or leave the line, and that is the minimum distance allowable for trucks to enter or leave the park.

The ground used for the park should have a resistant soil, either gravelled, macadamized, or paved.

175. During road marches, it is often preferable to bivouac on the road, to avoid taking the trucks on soft soil of fields. In such cases, two general procedures are possible:

(a) Where roadway is sufficiently wide or has practicable sides, place the trucks perpendicular to the roadway with radiators away from the roadway, but keeping the traction wheels on firm ground, though clearing the roadway as much as possible. If the space on either side of roadway is sufficient, the company may thus be drawn up in two lines on either side of the road.

(b) Where the road is not sufficiently wide for above, the trains should be closed up in column of trucks with at most one yard distance between trucks, and placed as far to the right of the roadway as possible, leaving sufficient room on roadway to allow for circulation of other vehicles.

176. In each of the above cases, care should be taken to leave a clear passage way for passing vehicles. Precautions should also be taken to prevent accident from such vehicles. This may be done by placing lanterns or lights on end trucks, and by stationing sentinels at both ends of the line or column to warn passing vehicles and to make them take a moderate rate of speed while passing the trucks.

177. The normal camping rules as to sanitation should be rigidly enforced: All refuse should be burned or buried. This especially necessary where the bivouac is made along the highway.

178. In France, the usual method of taking care of troops in a semi-permanent location is by billets. The following are extracts from G. O. No. 18, H. A. E. F., January 31, 1918, governing the billeting of troops:

(a) "There will be a Town Major (T. M.) or Acting Town Major (A. T. M.) in each village or commune in which troops are billeted."

(b) "Troops proceeding to an area for billeting will be preceded by at least one day by one officer per village to be occupied, together with one N. C. O. from each company or similar units. The officer will report to the T. M. the strength of the units he represents. He will be furnished by the T. M. with a written assignment to billets, and a rough map of the village. The officer and his N. C. O.'s then visit the billets, arrange details of assignment, meet their units on arrival and conduct them to their billets."

(c) "C. O.'s of units will co-operate with the T. M. in making effective standing arrangements in regard to police, water, bathing, washing, latrines, fire protection, refuse disposal, traffic regulations, and similar matters. Care will be taken to leave billets vacated in a clean and sanitary condition."

SANITATION

179. The camp will be kept clean and thoroughly policed at all times. Ground around incinerator must be kept free from scraps of food. Each company will be held strictly accountable for any nuisance that may be committed in its camp, the occurrence of which will always be followed by disciplinary action. All articles not completely destroyed in incinerator will be hauled to the dump every other day or saved for salvage to be forwarded to such stations as designated in General Orders, bulletins, and circulars.

180. No alcoholic liquors of any kind are permitted within the limits of the camp.

181. Peddlers and solicitors are not permitted in camp or barracks, without written permission from the commanding officer thereof.

182. *COMPANY KITCHENS.*—Kitchens will be scrubbed once a day, care being taken to prevent too much water being used so that puddles do not collect in front of the doors. All kitchen supplies will be kept neatly piled on racks provided. No boxes, sacks, or kegs will be placed on the floor. All kitchen utensils will be hung in their proper place or stored on shelf underneath cooks' table.

183. *DISH CLOTHS.*—Dish cloths will be boiled out daily on the kitchen range. They are to be hung on rope provided for the purpose for drying on the inside of the kitchen.

184. *MESS TABLES.*—Mess tables will be thoroughly scrubbed with soap and water daily, care being taken to remove all grease and dirt accumulating in the cracks of the table. All receptacles for catsup, vinegar, etc., must be thoroughly cleaned at this time.

185. *GARBAGE CANS.*—Garbage cans will be kept in special container established for this purpose. These will be whitewashed at intervals and otherwise kept in state of perfect police. Only such garbage as will be consumed by hogs will be put in garbage can. Other kitchen waste such as coffee grounds, paper, etc., must be incinerated. No slop water will be put in garbage, as this must be incinerated.

186. *LATRINES.*—Care will be taken to prevent waste paper from being scattered therein. Toilet paper will be provided by each company. All care of latrines is left to attendant appointed.

187. *VENEREAL PROPHYLAXIS.*—Prophylaxis must be taken within eight hours in order to insure prevention of venereal disease.

FIRE ORDERS

The following regulations for the government of a Motor Transport Company, in case of fire, will be duly observed by all concerned.

188. In case of fire, the alarm will be given by the sounding of auto horns or other appropriate signals, men being at once designated for this purpose by the ranking officer or non-commissioned officer on the ground at the time.

189. A Fire Marshal will be designated by the Company Commander, and in case of fire, the guard will be under the orders of the Fire Marshal during the absence of the Company Commander. In the absence of the Fire Marshal and Company Commander, the senior officer or non-commissioned officer present will perform this function.

190. Certain squads to be picked by the Company Commander will be designated as Special Guard Squads and in case of alarm all present of these squads will immediately throw a guard around the entire camp. This guard will prevent the entrance of unauthorized parties into camp, will prevent theft and will guard against disorder generally. They will receive orders from the Company Commander or the Fire Marshal.

191. Certain squads will be designated as Tool Squads. In case of alarm all members present of these squads will at once secure picks, spades and axes, and will then fall in, in their company street, or other designated locations, and await the orders of the Company Commander or of the Fire Marshal.

192. Certain squads will be designated as Sand and Gunny-Sack Squads. All members of these squads will, in case of alarm, immediately provide themselves with full complement of sacks for smothering of fire and with buckets filled with sand or earth. They will then fall in, in their company street, or other designated location, and wait orders from the Company Commander or Fire Marshal.

193. The organization will keep its extra fire extinguishers in clearly designated and well-known places, ready for instant use in case of alarm. It will also provide itself with piles of sand, conveniently located. This sand will be kept sufficiently moist to avoid loss from the wind.

194. In case a Post is occupied by more than one Motor Transport Company, the commander of the Post will make and publish a proper adaption of the above rules.

PRECAUTIONS AGAINST FIRE

195. *GASOLINE MUST BE HANDLED WITH CARE AND COMMON SENSE.*—Gasoline vaporizes easily, and as the vapor is heavier than air, it sinks to the ground. When filling the gasoline tank, be sure that there are no open lights or fire near. If the tank is to be filled at night, do not use a flame lamp. Use an electric flash lamp. Do not use the gasoline funnel for anything else.

196. *IN CASE OF FIRE, DO NOT TRY TO PUT IT OUT WITH WATER.*—The burning gasoline will float and spread the fire. Always keep a pail or two of sand handy, and smother the flame with it. A fire extinguisher should also be kept at hand.

197. In case of a truck catching on fire, the first thing to do, if possible, is to turn off the supply cock from the tank to the carburetor and then push the car away from the blazing gasoline on the ground.

198. Do not let a pool of gasoline drip from the carburetor when priming it, as a chance short circuit may give a spark that will set it on fire.

199. *Keep all engine parts, drip pans and under parts of vehicles clean* and the gasoline that drips into these parts will soon evaporate, thereby greatly reducing that possibility of fire.

RULES FOR DRIVERS

200. (Complete rules for road procedure and convoy operation will be found in Chapter X of this manual.)

(a) Enlisted men while actually driving trucks or automobiles will not salute.

(b) Drivers of motor vehicles are prohibited from smoking while driving.

(c) Motor vehicles will at all times be operated carefully and speed will be reduced in congested and narrow streets, at crossings and on turns of the road.

(d) Warning signals will always be sounded at crossings, blind corners or any other place where an accident would be at all likely to occur.

(e) Motor vehicles will not be parked in front of saloons, cafe, and public houses.

(f) Motors will not be allowed to run when car is standing for a period longer than one minute.

(g) When vehicle is standing idle for any length of time, minor adjustments should be made.

(h) Chauffeurs will carefully comply with local traffic regulations.

(i) Keep to the right of the road. In passing vehicles going in the same direction always pass to the left. Whenever doubt exists as to the ability to pass a point or vehicle with perfect safety, slow down or stop.

(j) In parking, the hub of the inside wheel should be within 12 inches of the curb, never closer than 3 inches.

(k) Chauffeurs must turn in report of accident on proper forms immediately on return to station.

(l) Chauffeurs must keep vehicle cleaned, greased, oiled and loosed bolts, nuts and screws tight.

(m) Chauffeurs must have due regard for others using public highways.

(n) Use your head as well as your hands and feet in driving. It is not necessary to continually sound the horn to clear the right of way.

HINTS FOR COMPANY COMMANDERS

(a) See that your commands are well disciplined. Create a spirit of rivalry among the men so that they may be continually "on the job." Have your men work not only *for* you but *with* you.

(b) Reward men deserving of recognition.

(c) Create a Roll of Honor so that all may see the grade of the men in your command based on condition of vehicles, personal appearance and service rendered. Team work always wins.

(d) Watch out for the little things, but make your non-commissioned officers understand that they are just as much responsible for their share of the responsibility as you are for your share.

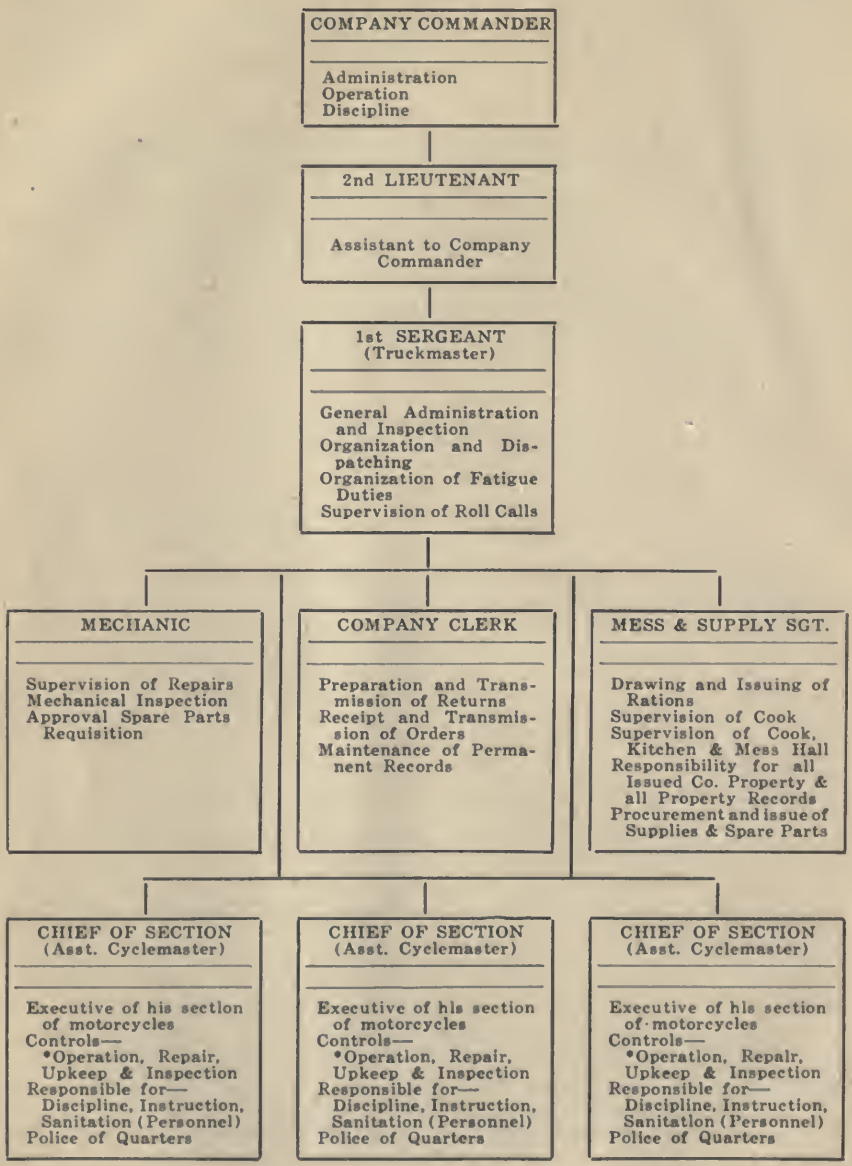
(e) Play no favorites among your men. Teach them to be courteous, neat and always willing.

(f) Have your men understand that if there is something they want to know and it is worth knowing, they can always go to you. Take the trouble to explain things so that they will all understand.

(g) Always look to their comfort and entertainment, where possible.

(h) Good food, comfortable quarters and abundance of work make a happy command.

MOTORCYCLE COMPANY



•Includes Responsibility for Drawing Gasoline, Oil and Grease.

NOTE—THIS IS A TYPE ORGANIZATION AND IS INTENDED MERELY AS A GUIDE

CHAPTER VIII.

THE MOTORCYCLE COMPANY

GENERAL

202. The general scheme of organization and administration of a motorcycle company is identical with that of a motor transport company. The details of organization are shown in the accompanying chart and the Approved Tables of Organization.

OPERATION AND DUTIES

203. The motorcycles and side cars assigned to a company will be one of the various standard makes issued to the army. The details of equipment vary according to the specific make of the motorcycle, and there is no general list of equipment that covers all these types. The specific list, however, will be given in the invoices or other record of property furnished the company commander when he receives the motorcycles assigned to his company. In addition to this invoice, he should procure printed publication issued by the manufacturer of the motorcycle, which ordinarily includes detailed instructions as to their care, operation and upkeep, and a parts list, giving the serial or manufacturer's number of each part.

204. In each company the division of responsibility with reference to operation, repair and upkeep of the mechanical equipment should be established by the company commander, and published in a company order, so that each member of the company will be thoroughly familiar therewith.

205. The general practice is to make each motorcycle driver responsible for the operation, care and upkeep of the motorcycle and equipment, as well as all other property assigned him. The extent of the repairs that the drivers should be required to make depends much upon their ability and training. In general, however, this will extend to what are classed as minor repairs, not requiring a more extensive mechanical knowledge than is possessed by the ordinary driver. Work on the motor, ignition, and electric lighting system, or on the interior mechanism or running parts should normally be done under the direct supervision and orders of the mechanic. Aside from this it is better for the chief of section to determine the proficiency of the individual driver before letting any repair, except the most simple, be performed by him. Beware of the work of amateur experts.

206. The motorcycles of each section are under the direct supervision of the assistant cyclemaster, chief of the section, who is held responsible for their upkeep and repair. Likewise, the mechanic, with the assistant mechanics, has general supervision over the mechanism of the motorcycle equipment, as well as the detailed repair work devolving on them.

207. *DUTIES OF ASSISTANT CYCLE-MASTERS.*—Each assistant cyclemaster is responsible for the discipline, instruction, and all other matters pertaining to the personnel of his section; and for the operation, repair and upkeep of the equipment assigned thereto. He is the intermediary between the men of his section and the cycle-master or company commander. His supervision extends to all details connected with his section, including police and sanitation of quarters, seeing that his men are provided with the necessary equipment, clothing, etc. All orders for his section, either to the various members of his personnel or to the units of his equipment, should be given to him. He should assure himself that his section is in proper condition at all times by making regular and systematic inspections of his men and equipment. He should examine all his motorcycles on their return from work, and see that the drivers have taken proper care of them, and the proper repairs are made. In his absence, for any cause, an acting chief of section should be designated to perform his duties.

208. *DUTIES OF THE MECHANIC AND ASSISTANT MECHANICS.*—The practice in reference to mechanics varies in different companies according to local circumstances. The two general systems are (1) the mechanic and assistant mechanics are under direct control of the cycle-master and are not assigned to a given section; (2) the mechanic and assistant mechanics are assigned to sections and each comes under the control of the corresponding chief of section. In either case, however, the mechanic should be held generally responsible that proper repairs are made. He is in charge of the repair and tool equipment pertaining to the organization. He should sign for the tool equipment and issue it to the assistant mechanics on proper receipts. He should be held responsible that this equipment is properly kept up and that any shortage by damage, loss, etc., are properly made up. Normally, he should see that the assistant mechanics are properly qualified and should instruct them in their work. In order to perform their duties properly, the mechanic and assistant mechanics should be thoroughly familiar with the instruction book issued by the maker of the machines furnished the company.

209. *DUTIES OF DRIVER.*—He keeps his motorcycle and its equipment clean and in proper repair and working order. In order to do this, he utilizes his spare time while not on duty to do the minor work required thereon. He should be especially required to attend to the proper lubrication of all parts of the motorcycle mechanism and to report promptly any defect noted or repair needed. Operators are cautioned against overloading a motorcycle or sidecar. The maximum weight to be carried by a solo motorcycle is 300 pounds. The maximum for a motorcycle and sidecar combination is 450 pounds. These weights apply to the twin-cylinder, three-speed motorcycles now in use. The driver should be familiar with the mechanism of his machine and its proper operation, and for this purpose he should thoroughly study the contents of the instruction book issued by the maker. The driver should be required to wear proper uniform when driving.

210. *ROUTINE.*—The following is a brief account of the daily routine of a company engaged in work at a depot or permanent camp. Any variation will be noted under "Road and Route Marching." The regular reveille and breakfast should be had at the hours prescribed for the command in general. After reveille the tents or quarters should be properly arranged, bunks made up, etc. The drivers for duty then proceed to the park and see that their machines are in proper condition. This is done under the direction of the assistant cycle-masters. The machines are sent out at the proper time for work details.

211. When a machine returns to the company park, after a day's run, it should be gone over by the driver, under supervision of the assistant cycle-master, and be put in shape for immediate work if ordered out. This includes the filling of gasoline tanks, replenishment of lubricating material, filling lamps, if they use oil, and in making all repairs and adjustments. The invariable rule should be that motorcycles in parks are always ready to make a day's run. On returning to the company park, the drivers turn in the written order, if one was given, that sent them to work and at the same time complete their daily reports and turn them into the company office.

212. Motorcycle company commanders cannot be too careful of the grade of oil used. Never allow a tank to be filled with automobile oil unless in an emergency, when motorcycle oil cannot be obtained. In case auto oil has to be used, frequent use of the hand pump is necessary. Motorcycle oil for summer use should be Mobile B; and in winter, Mobile BB; or during extreme cold weather, Mobile A, or oils of like viscosity and flash test.

213. The issuing of gasoline and other supplies is done under the immediate supervision of the man detailed therefor; precautions to be taken against fire should be given in the form of "Fire Orders" prepared by the company commander.

214. The other routine work is carried on according to circumstances that vary so greatly that more definite description thereof would be without profit.

TACTICAL FORMATIONS

The tactical formations required of a motorcycle company may be classed generally as formations for road, park and inspection.

215. *ROAD FORMATIONS.*—The normal road formation is in column, with ten yards' distance between motorcycles, giving the company a road space of 400 yards. This distance may be changed at the discretion of the company commander, according to the conditions of the march; however, it should never be less than six yards, and then only for very slow rates of speed. Whenever the company halts, the motorcycles should close up to one yard distance without command.

216. *PARK FORMATIONS.*—The company may be parked either in line, double line column of sections, or, exceptionally, in column or corral.

(a) *Line.*—Motorcycles are in line, normally, with one yard interval between them. A greater or less interval may be ordered by the company commander according to parking space available.

(b) *Double Line.*—Motorcycles are formed in two lines, machines facing each other with a distance of one yard between front wheels of opposite machines. A greater distance may be ordered by company commander. This is the preferable parking method for a permanent camp or in places where the space or tactical situation permits. In this formation the machines are easily accessible from all sides for work.

(c) *Column of Sections.*—Sections are in line, with intervals of one yard between machines, and distances of ten yards between sections. These distances and intervals may be varied at the discretion of the company commander.

(d) *Column or Corral.*—(1) Column: This method of parking is used only where sufficient lateral space is not available for one of the other formations. This would be the case when the company is in bivouac along a road not permitting a line formation. In this case the distance between machines should be reduced to a minimum not over one yard at the most. (2): Corral: The motorcycles may be parked so as to form a closed corral for defense. This is an exceptional method and very rarely resorted to.

217. *FORMATIONS FOR INSPECTION.*—The formation for inspection will be either in line or column of sections. Interval between machines two yards. Distance between sections fourteen yards. The procedure to be followed while inspecting a motorcycle company is given in Chapter XII of this manual.

218. When driving in company or other formation, or singly, the following road rules must be observed:

(a) When stopping or slowing down, raise either arm to a vertical position from the shoulder, and hold it in this position until a stop is made or reasonable speed is resumed.

(b) When turing right extend the right arm horizontally from the shoulder, and when turning left extend the left arm horizontally from the shoulder, holding the arm in this position until the turn is made.

(c) On a crowded road, make no attempt to turn unless the turn can be made completely under power.

ROAD AND ROUTE MARCHING

219. *ORDER OF MARCH.*—The order of sections in column should ordinarily alternate daily. The repair car should be in the rear of the train. The company commander rides wherever he judges his presence is necessary, but it is generally at the rear of the column that he will render his supervision most efficient. The cyclemaster rides wherever the company commander directs. The assistant cyclemasters ride with their sections, where they can most efficiently conduct their operation. The mechanic rides in the repair car. The assistant mechanics may ride either in sidecars, or may be placed in the two forward sections of the company.

220. *DISTANCE BETWEEN VEHICLES.*—Except on very dusty roads, or those with heavy grades, where greater distances may be taken, the vehicles should be about ten yards apart. Due to variations in mechanism and skill of drivers, different vehicles do not ascend slopes at the same speed. Therefore,

these distances will vary, but the leading vehicle should normally slow down after climbing a slope, so that the train will not spread out too much. In some cases, after climbing or descending a difficult slope, the leading vehicle should stop, to allow the column to close up.

221.—*RATE OF MARCH.*—This depends on the condition of the roads as well as on other incidents of the march. The leading motorcycle should rarely take the maximum authorized speed, as motorcycles in the rear will have to exceed that in order to keep up. The speed should be as regular as possible, so that motorcycles may keep their distances without speeding. Never allow individual motorcycles to exceed the authorized speed limit.

222. *MARCH DISCIPLINE.—Vehicles must always keep well on the right of the road.* This is especially necessary in operating on roads in field service. This requirement must be rigidly enforced. The driver of each motorcycle, personally or by means of a rider in his sidecar, should keep in touch with the motorcycles in the rear, so that if any halt is made, he can do likewise, and give the proper signal to the motorcyles in front. Under no circumstances should a company spread out on the road; this should be a constant pre-occupation of all in authority in the company. If a motorcycle stops for repairs, the entire company should stop. The company commander, or the cyclemaster, if so authorized, should ascertain the time required for the repair and the nature of same. The company commander will promptly decide whether to halt the company until the repair is completed, to leave the machine with sufficient personnel to make the repair and to rejoin the company later, or to abandon the motorcycle. The company commander in directing whether to abandon a machine must remember that "Service" is the mission of the company, and that it is no disgrace to abandon a motorcycle whose mechanism has broken down. This point of service is one that the company commander should constantly bear in mind, as his subordinates are generally more interested in the mechanism of the motorcycle, and more apt to lose sight of the purpose of the company in their interest in the mechanism.

223. *ROAD DIFFICULTIES.*—These are due to the nature of the road surface, the grades or natural obstacles encountered.

(a) In muddy roads it may be necessary to use chains on the traction wheels.

(b) Do not let the motorcycle wheel revolve uselessly. as that simply serves to dig it in deeper. In getting motorcycles through sand or mud, the greater part depends on the practical genius of the members of the company.

(c) In going up steep grades, or crossing streams, be careful to keep the motorcycles far apart, to avoid any possible accident. A similar condition exists with reference to descending steep slopes. Brakes should not be relied on, but the gear should be set in first speed, and the motor used as a brake.

(d) Hold a driver pecuniarily responsible for having his motorcycle damaged by collision. When crossing a railroad track at a grade crossing, or at any other dangerous place, station a man during the entire passage of the company, to insure the safety of the vehicles.

(e) At noon give the men some hot food and a big cup of hot, black coffee, if practicable, and they will drive as well in the afternoon as in the forenoon.

224. *DAILY MARCHES.*—The normal daily march for a motorcycle company is 150 miles. Do not run after dark if it is not absolutely necessary. Running at night is difficult, fatiguing and very conducive to accident. When running after dark, in company formation, it is absolutely essential that tail lights be lighted, and should the occasion demand, tail lights can be partly obscured, or hooded, so as to show directly to the rear only.

225. *PARKING AND CAMPING.*—This is discussed under "Tactical Formations."

226. *DAILY INSPECTION AND UPKEEP.*—On arrival at camp or bivouac, drivers will make a thorough inspection of their motorcycles, under supervision of the assistant cyclemasters, and all possible repairs will be made. In case of impossibility of repairing a motorcycle, the company commander decides as to its disposition. If the company arrives late at night in the darkness, it is advisable, conditions so permitting, to make this inspection and repair on the following morning before leaving camp.

227. *REPLENISHMENT OF GASOLINE, OIL, GREASE, ETC.*—As soon as machines get into camp or bivouac, they should be replenished with these supplies. By reason of the danger of fire, the gasoline tanks should be filled by daylight. If this is impracticable, due to late arrival of the company, the company commander decides, according to the special circumstances, whether to put this off until the following morning, or to fill in the dark. In the latter case, great precaution should be taken. Electric flashlights should be used. There should always be a sufficient number of fire extinguishers handy, and several pails of sand or soft earth to smother any gasoline fire that may start. If lanterns are in the vicinity, they should be hung high up, so that they will not ignite gasoline vapors, which, being heavier than air, sink to the ground.

228. The rule to be enforced, unless conditions absolutely prevent, is to have all motorcycles filled with gasoline and oil and ready as soon as possible after reaching camp.

229. Each evening the dispatcher makes out written orders for motorcycles in the various companies to fill the work details for the next day. There are certain classes of work, such as mail routes, that are permanently assigned to certain motorcycles. Other regular classes of work are done by each company according to roster, so as to equalize work.

230. In a similar manner, each motorcyle company takes its turn, by roster, to be on duty to answer special calls.

MOTORCYCLE MAINTENANCE

231. The general principles of good upkeep are the same for all motor vehicles. Certain routine operations *must* be periodically attended to by each driver. The necessary upkeep schedule to be followed is outlined below, and this procedure must be faithfully adhered to and constantly checked up by means of inspections. A copy of this Care and Upkeep outline should be a part of the equipment of each motorcycle.

232. Intelligent upkeep and repair demands a *thorough knowledge* of the particular type of motorcycle operated by the company. For this reason each company will be supplied with a set of instruction books issued by the manufacturer. The company commander should fully realize that important minor repairs must often be made under trying circumstances by the drivers, assisted by the company's mechanic. This demands a knowledge of the machine used, and the responsibility for adequate instruction of the men rests upon the shoulders of the company commander.

233. Much time ordinarily wasted by drivers should be used to good advantage for lubrication, adjustments and general cleaning.

REPAIRS MADE BY THE COMPANY

234. As far as possible, actual repairs should be made by the two assistant mechanics, leaving the chief mechanic free for supervision of repairs, and for inspections.

235. A log book is supplied for each motorcycle. It *must* remain with the motorcycle at all times, and drivers will be disciplined if it is lost. In it is entered a record of all repairs of any consequence made on the motorcycle or the sidecar, if one is attached.

236. Informal inspections by the company commander should be going on *constantly;* also by the cyclemaster, assistant cyclemasters (who should be held particularly responsible for the upkeep of motorcycles in their sections), and the mechanics. The officer or non-commissioned officer inspecting cannot be expected to make a complete overhauling at every inspection, but by looking in unexpected places where oil cups are located, many cases of laxity will be uncovered. Any dealings with drivers, as the result of inspections, should go through the proper channels.

237. Formal inspections should be made periodically, and under definite rules of procedure as prescribed in Chapter XII. The appearance and neatness of the motorcycle and sidecar, if one is attached, should not be neglected.

RELATIONS WITH SERVICE PARK

238. Each motorcycle company will be assigned by the Motor Transport Officer of the division, or other unit served by the company, to a definite service park. For all repairs which would consume more than one working day in the company's shop, the disabled vehicle must be sent to the assigned service park.

239. In case a motorcycle must be sent to a service park for repair, if possible the service park will substitute another motorcycle in its place on M. T. C. Property Voucher M. T. C. Form 101.

240. Companies will be outfitted with spare parts, M. T. C. supplies and material whenever possible according to standard lists, which are prepared by the Supply Division, Headquarters M. T. C. One copy of these lists should be kept by the company commander, and one by the property sergeant. Requisitions for parts, supplies and material shall be made out on M. T. C. Form 160, by the property sergeant on the mechanic's recommendation, and signed by the company commander. These requisitions will be forwarded as often as desirable to service park to which the company is assigned. Stock on hand, plus unfilled requisitions, should equal the standard lists and should form the basis of inventory.

241. When any part shows undue wear or breaks, or any trouble or suspected trouble develops beyond the facilities at hand, the part must be replaced, or motorcycle *must* be sent immediately to the assigned service park for replacement or repair.

CHAPTER IX.

OTHER TRANSPORTATION FORMATIONS

242. These formations will ordinarily consist of groups of motor transport and motorcycle companies or of detachments of varying size. The Tables of Organization for the M. T. C. provide for a supervising formation called "Headquarters Motor Command" on a basis of one for every four motor transport or motorcycle companies. This proportion is not rigid, but may vary from two to six companies. It is designed to furnish a supervising overhead over organizations operating in the same locality or in the same formation. Its composition is given in M. T. C. Tables of Oranization. It consists essentially of a Commanding Officer with a commissioned staff of three officers. One of these is the Adjutant, or Administrative Officer; one is an officer of technical experience who is especially charged with the supervision of the maintenance and repair activities and the technical inspection; the third is the supply officer, who is especially charged with the duty of supervising the spare parts supply. These officers are assisted by the necessary number of non-commissioned officers and soldiers.

243. More extensive groups of these formations would be organized on similar lines with commanding officers and corresponding staff officers of higher rank. The staff would ordinarily be increased by having several commissioned assistants to the various staff chiefs.

244. A motor transport detachment should be organized on lines similar to the above, but actual composition will be determined entirely by the local conditions under which it may be serving.

CHAPTER X.

REGULATIONS FOR STANDARD MOTOR VEHICLE OPERATION

ROAD PROCEDURE FOR ALL MOTOR VEHICLES TRAVELLING ALONE OR IN CONVOY

245. *GENERAL RULES.*

1. The military police on duty will be strictly obeyed.

2. No vehicle will be left by the road side unattended. In case of a breakdown or other cause for delay, the driver will remain with his charge until the vehicle has been returned to its base or after relief by competent authority, e. g., commanding officer.

3. There is no excuse for a broken down vehicle being left in the middle of the road.

4. A guard will be placed over vehicles parked for the night.

5. Except in cases of emergency, no motor vehicle will be driven by any person except the driver assigned thereto.

6. Never, under any circumstances, fill the gasoline tank or work on the carburetor in the presence of a naked flame or oil lantern. If this work must be done in the dark, use an electric torch.

7. Do not smoke while driving.

8. Drivers are cautioned that when a block occurs there is great danger of drawing heavy shellfire, due to observation of congestion by the enemy. Each driver must endeavor to prevent such blocks by complying with traffic regulations and orders of the traffic police.

9. Motor vehicles will be driven without lights as such times and such places as specified by the traffic control or road signs.

246. *TRAFFIC REGULATIONS.* (See also Par. 249.)

1. Drivers will keep on the righthand side of the road *at all times*, whether *moving* or *standing*.

2. In changing direction or stopping, *always* give appropriate hand signals.

3. The use of muffler cut-out is absolutely forbidden *at all times*.

4. Pay careful attention to road signs and to convoy signals.

5. Never proceed on a road in a direction opposite to that prescribed for traffic circulation.

6. Always give way promptly to faster moving vehicles.

7. On dry, dusty roads in the Zone of Advance, it is necessary to reduce the speed, in order to keep down the dust. Clouds of dust attract the enemy's attention. Reducing speed also reduces liability to accident, especially at night.

8. Loaded trucks have the right of way over empty convoys.

9. Beyond railheads, etc., loaded vehicles going to the front have the right of way over ambulances.

10. Drive slowly at night when without lights. This avoids accidents and trucks are less apt to be lost.

11. If driving with lights and a car or convoy approaches, dim your lights. It avoids accidents due to blinding headlights. This is especially true when the car or convoy is driving without lights. In approaching or passing vehicles under such conditions dim your lights at once. Not only does the light blind the men, but the shadows cast are very confusing to a man when driving in the dark.

12. Dim all lights in towns and cities.

13. In descending a steep hill use the engine as a brake by shifting to a lower gear.

14. A halted convoy must never be passed without first obtaining permission from its Commanding Officer and without making sure that the doubling can be accomplished without confusion.

15. Do not make unnecessary noise with horns or Klaxons.

16. Observe the following rules for *"doubling,"* i. e., passing traffic moving in the same direction.

(a) In passing vehicles travelling in the same direction, *the driver will always pass the vehicle on the left, and sound his horn.*

(b) In passing a standing or moving convoy, *a driver will slow down and sound his horn.*

(c) A vehicle must never double moving vehicles having a similar or higher speed limits. Thus a tractor must not double a truck, and a truck must not double a touring car, etc.

(d) A vehicle must never double when going around corners or sharp curves.

(e) Vehicles must never attempt to double when there is a block ahead.

(f) Never double in towns or villages.

(g) Never double while descending steep hills.

(h) Never double just before reaching the top of a hill.

(i) Do not double unless the road is wide enough to allow 18 inches between vehicles.

(j) In doubling, do not make sharp angles before or after passing the vehicle in front.

17. In meeting vehicles coming in *opposite direction* observe the following rules:

(a) A driver will always pass an approaching vehicle on the right of the road and give it half of the road.

(b) Slow down, if the approaching vehicle is throwing clouds of dust across the road.

(c) Slow down to half speed if the road is narrow or rough.

(d) In case of traffic or other obstacle at the point where two vehicles will meet, the vehicle having the clear road ahead has the right of way, and the other vehicle must slow down or stop if necessary.

18. *At cross roads* observe the following rules.

(a) Unless the cross roads can be seen in either direction for 75 yards, *slow down.*

(b) A vehicle travelling on a main road has the right of way over vehicles travelling smaller roads, unless specific instructions to the contrary are prescribed by the traffic police.

19. *In crossing railroads:*

(a) Slow down.

(b) If gates are closed, do not start before *both* are open.

(c) In case the road passes under the railroad, make sure that there is adequate clearance between the bridge and the top of the vehicle.

20. *In halting* observe the following rules:

(a) If it is necessary to stop on a hill, put a block under the rear wheel.

(b) Motors will not be left running to exceed one (1) minute when the vehicle is standing.

(c) Examine amount of water, gas and oil after each stop.

(d) Vehicles will not halt on bridges, in narrow roads or defiles, or on turns. They will never halt within fifty yards of a cross road, road fork or railroad crossing.

(e) Investigate and find the cause of all unusual noises in the vehicle.

(f) Should a vehicle be unable to proceed under its own power, request should be made on the next one in the rear to pull forward and give assistance.

(g) Drivers, when dismounted, will keep off the center and lefthand side of the road.

247. *SPEED LIMITS.*—The maximum speed of motor vehicles is prescribed as follows:

IN CITIES AND VILLAGES

Passenger Cars, Ambulances, Motorcycles	10 miles per hour.
Trucks	8 miles per hour.

ON OPEN ROADS OUTSIDE OF CITIES AND VILLAGES

Trucks	12 miles per hour.
Ambulances	14 miles per hour.
Light Passenger Cars	25 miles per hour.
Heavy Passenger Cars and Motorcycle Solo	35 miles per hour.
Motorcycles with Sidecars	30 miles per hour.

248. *ACCIDENTS.*—In case of an accident, however trivial, which results in injury to persons or property, drivers will fill in the information called for on M. T. C. Form 124, *a supply of which will be kept on all motor vehicles.* Commanding Officers will, in every case, institute court martial proceedings against drivers who fail to render this report immediately upon return to their organization. Immediately upon being informed by means of M. T. C. Form 124, or by other means that an accident has occurred to one of his vehicles, the Company Commander will himself make an investigation.

249. *RESERVED ROADS.*—The following rules and regulations have been agreed upon by the various Allied armies as uniform application on reserved roads ("Routes Gardees") under American or Allied traffic control.

(a) Representatives of American or Allied traffic control organizations, who are stationed on these roads, and who may be known by the fact that they wear a green and white arm band, are in absolute control of traffic on the road. Instructions given by these men in all matters affecting movement of traffic are to be strictly complied with, even though they contradict instructions previously received by a vehicle or convoy.

(b) A vehicle will never double (i. e., pass when going in the same direction) any vehicle of the same or higher class as regards rate of speed. These classes in order of speed are as follows:

1. Staff cars and motorcycles,
2. Ambulances,
3. Trucks,
4. Tractors.

A fast pneumatic-tired truck may under certain circumstances be permitted to double a slower truck. An ordinary cargo truck will never double another truck.

(c) A vehicle will never stop on a reserved road unless forced to do so by a breakdown or by a stoppage of the traffic ahead. If forced to stop by a breakdown, the vehicle will be gotten to the extreme right of the road and if possible off the road, if necessary by towing or pushing.

(d) Convoys of motor vehicles or horse-drawn vehicles on a reserved road will be broken up into groups of ten motor vehicles or twenty horse-drawn

vehicles. A distance of fifty yards will be kept between this vehicle and the leading vehicle of the next group. Within the group, a distance of twenty yards will be kept between trucks.

(e) Vehicles which in sub-paragraph (b) above are permitted to double other vehicles will do so where necessary by passing from space to space between these separate groups, so as to interfere as little as possible with the flow of traffic in the opposite direction.

(f) Marching troops are not allowed on a reserved road without the specific authority of the Traffic Control Organization, except when the road for the time being is reserved for the exclusive use of marching troops. The troops will march with an interval of fifty yards between companies or similar organizations, and will follow any other rules regarding dividing up the column which may be prescribed by the road control authorities. As regards observing instructions concerning routes, halts, etc., marching troops are bound by the orders of the Traffic Control Service in the same way as are vehicles.

(g) The following translations of road signs found on reserved roads should be learned by all concerned:

"Ralentir"	Slow down.
"Passage a niveau"	Railroad grade crossing.
"Tenez votre droite"	Keep to the right.
"Tourant Brusque"	Sharp turn ahead.
"Croisement"	Cross head.
"Virage"	Sharp turn ahead.
"Sens obligatoire"	Must go in direction indicated. (This way only.)
"Sens Unique"	One way traffic only.
"Defense de Doubler"	Do not pass any vehicle going in the same direction.
"Convois Double Circulation"	Convoys must use this road in both directions.
"Vitesse Maxima"	Maximum speed.
"Defense de stationner"	Halting forbidden.
"Eteignez vos lumieres"	Put out all lights.
"Gardez vos distances"	Keep prescribed distance (i. e., 50 yards between sections and 20 yards between trucks, as above).

CONVOY RULES

GENERAL

250. Every vehicle of a convoy will be governed by the rules for vehicles travelling alone, as well as by the following rules.

251. The purpose of a motor convoy is the efficient transportation of personnel and material. The success of any convoy depends upon:

(a) The condition of the vehicles.

(b) The training and discipline of the personnel.

The following road regulations and rules of convoy discipline will be thoroughly learned and observed by the officers and men of all operating units.

252. Two or more vehicles operating together, on the same road, will constitute a convoy.

253. When more than 10 vehicles are in a convoy, they will be divided into sections of not more than 10 trucks per section, properly designated by means of the red disc described below.

254. A non-commissioned officer will ride in each section, usually on the first vehicle of the section. His duties shall be to command and maintain discipline in his section; especially to see that proper distances are preserved between vehicles

and between sections, and that the vehicles keep on the righthand side of the road. The last vehicle of each section shall have projecting laterally upward from the rear of the vehicle, on the lefthand side, a red disc, 12 inches in diameter, fixed in such a manner as to be clearly visible from the rear. The last vehicle of the convoy will carry a double red disc as above.

255. A non-commissioned officer, usually the first sergeant, should ride on the first vehicle of the first section. In addition to the duties shown in paragraph (c), he will act as the guide of the convoy. He will carry maps of the country traversed and will be acquainted with the route to be followed. He will especially see that the speeds shown above are not exceeded. He will see that the convoy keeps to the righthand side of the road. He will take command of the convoy in the absence of the commissioned officers.

256. Whenever possible there will be on each vehicle a driver and an assistant driver. The driver will drive the vehicle, keeping to the righthand side of the road. *He will follow the vehicle of the convoy which precedes him, at the distance shown below.* The assistant driver will watch for all signals, and communicate to the driver. He will pass on the necessary signals to the vehicle following, and will relieve the driver on long convoys.

257. The distance which must be maintained by the vehicles of a convoy are as follows:

Between vehicles on the road outside of cities, villages and towns, at the average speed, 20 to 30 yards.

Between sections on the road outside of cities, villages and towns, at the average speed, 40 yards.

Between vehicles passing through cities, villages and towns, at average speed, 10 yards.

Between sections passing through cities, villages and towns, at average speed, 25 yards.

Between vehicles halted, five yards.

Between sections halted, 20 yards.

(See also Par. 249 above.)

In ascending or descending a long steep hill the distances between vehicles should be increased to 50 yards.

On approaching a hill the first car of the convoy should speed up, so that those behind can take the proper distance.

After the summit has been reached, the first car of the convoy *must* slow down, in order to let the last cars of the convoy catch up and take their distances.

When arriving at a town or village, the first car should slow down and, if necessary, stop, so that the last cars can catch up and take proper distances. This allows the convoy to pass through the town in a body, and eliminates the chance of cars becoming lost or leaving by the wrong road. The first truck of a convoy will run slowly after leaving a town or village long enough to allow any delayed trucks to close up to the required distance.

The speed of the first car must be governed in such a way as to enable the last car to keep the proper distance easily, and not fall in the rear of the convoy.

258. *STARTING.*—All vehicles in a section should start at the same time. In starting, vehicles should not exceed a speed of two or three miles per hour for about the first hundred yards, in order that the vehicles may take their proper distances in the section. A section should not start until the section commander has assured himself that all the vehicles are ready to start. This can be determined by vocal, visual or whistle signals.

259 *SIGNALS.*

Verbal	*Whistle*	*Sign*
Attention	Several short blasts	Hand moved above the head quickly, from side to side.
Crank motors	2 long blasts	Circles described in front of body with right arm.
Forward	1 long blast	Arm raised and lowered vertically from shoulder several times.
Halt	1 long blast	Arm extended horizontally.
Ready (to start)	None	Assistant driver stands on step, facing the commanding officer, arm extended horizontally.
Slow down	None	Arm extended horizontally and moved up and down in a small arc.
Stop motors	2 short and 1 long blast	Arms crossed in front of body at waist and moved sharply to sides.

These signals are standard, and variations therefrom are not authorized.

260. *STOPPING.*—All vehicles should stop gradually, pulling well over to the righthand side of the road while reducing speed; the assistant driver making the signal "Halt" to the vehicle behind. When a convoy stops, the distance given in Paragraph 257 will be maintained between vehicles and sections. Care should be taken not to block streets, cross roads or road forks.

261. *FILE CLOSERS.*—The last truck of the convoy should carry the tools, ropes, jacks, etc., which are necessary to effect simple road repairs. This vehicle will be in charge of the mechanic or other experienced man, who will act as file closer, and will have the assistant mechanics as near him as possible, on other trucks, available to act under his orders. His duties are to assist any disabled vehicle, and to make proper disposition of broken down vehicles, subject to the orders of the commanding officer. The file-closer will not leave any vehicle of the convoy without taking the proper measure either to repair the vehicle on the road, tow it along with the convoy, or make other proper disposition subject to the decision of the convoy commander. This repair truck should not ordinarily stop more than twenty minutes before going ahead to rejoin the convoy. The light repair truck, if taken along, will be placed in the convoy according to the judgment of the convoy commander and will be at his disposition and in charge of a mechanic.

262. A slower moving convoy must never be doubled without the officer in charge asking the permission of its commanding officer and making certain that the doubling can be completed without confusion.

263. Never double a halted convoy, a halted body of troops, or a body of troops moving in the same direction without the officer in charge first having gained the permission of the officer in charge of the convoy or the troops to be doubled.

264. When the convoy is stopped, see that the men stay *off* the road.

265. Each truck shall carry a tow rope.

266. Drivers should employ their time in greasing and oiling their trucks during loading and unloading periods.

267. In case of a long convoy in which it is necessary to take a gasoline truck, this truck should be placed next to the last.

268. A vehicle becoming disabled must drop out of the convoy, to avoid delaying the vehicles behind it.

269. When operating convoys at night, without lights, the speed and distances of the convoy should be reduced. This enables the trucks to more easily follow each other, prevents accidents and keeps the trucks from going astray. Occasional halts should be made to see whether all cars are keeping up.

270. If a truck is forced to leave the convoy for repairs, a space must be left at each stop, so that it can take its place in line on catching up with the convoy. A truck, however, overtaking its company at a stop will not move up to its place in line unless permission to do so has been granted by officer in charge.

271. The officer in charge of trucks has the right to refuse their being placed on ground which he considers would injure or endanger his equipment when loading or unloading.

272. Officers will not permit their trucks to run over soft ground, and will instruct their drivers to keep at least two wheels on the hard road at all times.

TYPES OF CONVOYS

273. There are three main types of convoys:

(A) A company, or part thereof.

(B) Two or more companies operating together.

(C) Troop convoy.

274. The methods of running, and the rules governing the operation of type "A" convoys, i. e., single companies in convoy, have been explained above. These rules govern, with few exceptions, the other types of convoy also.

275. *GROUP CONVOY.*

(a) The type "B" convoy, i. e., the Group Convoy, consists of several companies operating together, at times amounting to several hundreds of trucks. This type of convoy is used only when large quantities of material, supplies, ammunition or men are desired to be quickly moved from one part of the front to another, or concentrated at one point.

(b) There is an officer designated as Chief of the convoy. He has complete charge of all units of which it is composed. He is responsible for all necessary arrangements, the issuing of the required orders, *proper routing*, and the discipline of its personnel. He selects the assembly point where all the units meet to join the convoy, and the times when they shall arrive at this point. He designates the stopping and resting places to be made by the convoy when enroute.

(c) In order to get the trucks together, an assembly point is chosen. For example: There are ten supply trains which are going to operate as a group. They are stationed at different points and must be brought together. A point chosen near the area in which they are found, generally a cross road on the main road which the trucks are to follow. A time is set when each supply train shall arrive at this point (e, g., the first train at 5.30 a. m., the second at 5.33, the third at 5.36, etc., each train following behind the other at three minute intervals). There is no excuse for lateness; the trucks must be at the assembly point on time. In this way a large number of trucks can be concentrated in a single convoy without confusion or loss of time.

In very large convoys there may be several small assembly points, and then a main or final point. The convoy is dispersed in the same way as it is assembled, the units separating at a given point and proceeding to their bases individually.

(d) The officer in charge of the first train acts as guide of the entire convoy. It is his duty to lead the convoy along the route chosen by the commanding officer, to keep and regulate the speed of the convoy, and in the absence of the Chief of the convoy to take command.

(e) The officer in charge of the last train acts as *file-closer* for the entire convoy. He is in charge of the repair outfit, and it is his duty to see that all disabled cars are kept going, and to perform all the duties that are required of a file closer as stated above. It is his duty to keep the company commanders and the Chief of convoy constantly informed as to the location of all delayed trucks, and all other matters concerning them.

(f) The officers of the company act in the same capacities as the N. C. O.'s of sections. They follow their companies and should habitually place themselves in the rear of their companies. The train commanders *precede* their trains.

(g) A vehicle temporarily dropping out of a group must fall in behind the last car of the nearest company. It must not rejoin its original place until so ordered by the Chief of convoy.

276. *TROOP CONVOYS (Type "C").*

(a) The transportation of troops presents a number of features not to be found in ordinary cargo transport, and company commanders must, at all times, be in a position to prepare their trucks for this purpose at short notice. All portions of the truck equipment that have been removed, such as tops, benches and bows, must be kept together where they cannot be molested or lost and be readily replaced on the trucks. The company commander will verify the oil, gasoline and kerosene supply of each truck, and the condition of the lamps. He will ascertain the probable duration of the convoy and provide his men with food and clothing accordingly. It must be remembered that the troop capacity stated for a given truck includes the personnel equipment of the troops, so that unless called for, extra baggage trucks need not be provided. The men's packs and equipment should be loaded into the trucks and placed under the seats before the men get in. They are unloaded after the men get out.

(b) BE ON TIME.

(c) On the march, driver and non-commissioned officers of the convoy have charge of the men they are transporting and must watch them, particularly with a view to protecting the truck from damage.

(d) In transporting troops always carry along at least one extra truck, empty, depending on the number of troops to be carried. The troops *must* be gotten to their destination.

(e) Stop the convoy for ten minutes at intervals of about three hours and allow the men to get out. Do not stop in or near towns.

(f) Observe the following rules in loading troops:

(1) The convoy commander must always be at the loading point well in advance of his convoy, so as to have plenty of time to reconnoitre the place and to confer and make all necessary arrangements with the troop commander for distribution of troops for loading.

(2) The convoy must ordinarily be halted so that the last truck is just at the head of the column of troops, facing in the direction of their destination.

(3) On halting, each driver will attend to dropping the tail board of his truck and the arrangement of the benches for the men. In the meantime, the non-commissioned officer in charge of each section will assemble the assistant drivers of his section in column, single file, *facing* the troops, with the men arranged in order of trucks, first truck first, then second truck, etc. The assistant drivers of the first section are then marched toward the troops, the men of the other sections falling in behind. All the assistant drivers are halted in file, just in front of the head of the column of troops, and then execute "left face," facing center of the road. Then the troops are successively marched off in blocks of 20 (or whatever may be the capacity of the truck), beginning with the first truck, and each assistant driver takes charge of his section of troops, marching at the head until his truck is reached, when he and the driver of his truck attend to the loading of the men and the replacement of the tailboard. The non-commissioned officers of the troops should be in the ranks in order to facilitate counting.

(4) Non-commissioned officers in charge of sections signal to the company commander (or truckmaster) when their sections are loaded. The convoy is ready to start only when all the sections are ready.

(g) Unload the men, transported in the trucks, with the convoy headed in such a direction that the trucks will not have to double back and mix up with the troops getting away.

DUTIES OF THE COMPANY COMMANDER DURING CONVOY

277. Each company on convoy will be commanded by an officer or experienced non-commissioned officer, who will have charge of the personnel, vehicles and cargo. *He will be responsible for the discipline of his command, the care, main-*

tenance and operation of the vehicles and see that all rules of operation are complied with. When operating in the Advance Section, convoy commanders are not required to give receipts for their cargoes. Their total responsibility, therefore, rests in the exercise of due care in the operation of their trucks and delivery of their loads.

278. Before a convoy starts the company commander will see that the necessary supplies of gasoline and oil for his vehicles, and rations and supplies for his men, are provided in adequate quantities; that the cargo in each truck is properly loaded and secured; and will provide himself with necessary passes, orders, maps, etc., for the trip that he is to make. Before starting he will make an informal but effective inspection of his personnel and vehicles.

279. When a halt is made, the company commander will see that each driver does whatever is necessary to make his vehicle ready for an immediate start. After this has been done, it is the duty of the company commander to see that his men are fed and lodged when necessary.

280. For short convoys not employing many trucks and going to loading and unloading points well known to the men, it is often unnecessary for the company commander to be present. Ordinarily, however, he should be in active command, and, with exceptions noted below, he should habitually ride in the rear of his convoy, passing the vehicles of his column from time to time to assure himself of its efficient operation.

281. The company commander should precede his convoy:

(a) When covering little known roads.

(b) To reconnoitre loading and unloading points, so as to prepare the way for the trucks.

(c) Before the convoy arrives at a town the company commander should be there to find the route through the town, and to get information regarding traffic rules, etc., having instructed the truckmaster where to halt and wait outside of the town.

(d) At all other times made necessary by any situation arising.

282. The company commander should never leave his convoy without having given definite instructions to the officer or truckmaster left in charge.

283. Railroad crossings should be examined before arrival of the convoy, and if necessary a man should be posted at the crossing. Avoid splitting the convoy.

284. The company commander is responsible for his equipment. He can refuse to allow his trucks upon soft ground or in other situations not absolutely necessary. (Also see Convoy Rules, Par. 271, 272.)

285. The company commander should always try to settle for himself any unforeseen difficulties arising during the convoy, such as undue delays at loading points. He should telephone to his commanding officer only when absolutely necessary.

286. In covering little known roads, the officer in charge of the convoy will make a personal inspection of all bridges or will otherwise assure himself that the bridges to be crossed are in good condition and will support the loads required.

287. During long convoys, at intervals of approximately three hours, the convoy should be stopped to allow the men to relieve themselves and to make the minor adjustments that may be necessary.

288. In case of danger of attack by enemy aeroplanes, convoy commanders will take all necessary precautions. They will, if possible, use roads which are under the shade of trees or are camouflaged; and in case of actual attack by enemy aeroplanes will endeavor to spread the trucks of their convoy so that there will be an interval of at least 100 yards between trucks.

289. As far as possible, all orders which must be issued to the men or non-commissioned officers of the convoy will be transmitted by the convoy commander through regular channels. Convoy commanders will avoid as much as practicable the giving of commands directly to the drivers.

290. Vehicles, upon being loaded or unloaded, should only in very rare cases be dispatched to their destination singly, but should be dispatched in sections under the command of non-commissioned officers.

291. In convoys covering long distances, or on little known roads, the convoy commander will provide all non-commissioned officers of the convoy, and such other men as may be necessary, with complete details as to itinerary, destination, and all other desirable information.

292. It is not the duty of the drivers to load or unload cargoes, except in case of emergency. Fatigue parties from other troops should be furnished for this work.

293. Parking formations depend very largely upon the facilities of the situation. If necessary to park in column, leave only enough clearance between trucks to allow any truck to get out; and always leave 20 yards between sections. If possible, park cars in line or double line, leaving about 1½ yards between trucks and about 10 yards between ranks, being sure to align trucks carefully. Make sure the ground used for the park has a resistant soil. Park gasoline trucks 50 yards away from cargo trucks, and downhill if possible. Whenever possible, vehicles should be so parked as to be invisible to enemy aeroplanes.

294. In winter, when it is hard to start the trucks, the drivers should be at their places in ample time to prepare the trucks for the road, so that the convoy will start on time. After getting one truck started, the others may easily be started by towing them. A late start is inexcusable.

295. In cold weather every precaution should be taken against freezing in the motor and radiator. The following should be observed. Anti-freezing solutions should be used, if obtainable. The radiators, pumps and carburetors of all motor vehicles should be drained every night, unless the anti-freezing solution is used. As a further assurance that there is no water in any part of the engine, the motor should be started, after all the water that will drain freely from the pet cocks has ceased to flow. It should be run for a few minutes and then stopped by shutting off the gasoline supply at the tank. Any particles of water remaining in the water jacket or pump are in this way dislodged and evaporated. This also empties the gasoline feed pipe and carburetor. Then cover the hood and front of the radiator. Sacking stuffed with straw does very well for this purpose. The dangers of freezing cannot be too strongly emphasized, for the trucks have no shelter to protect them.

296. *CARE OF TRUCK TIRES.*

(a) Most tire troubles are the result of abuse rather than use.

(b) Cut off all loose ends and remove all stones lodged in the rubber; the tires should be very frequently inspected for this.

(c) Start and stop gradually. Jerky motions are bad for tires.

(d) Do not turn the steering wheel when the truck is standing still. Get the vehicle under way, otherwise the tire fastenings are strained.

(e) Keep the tires free from grease and oil.

(f) Avoid obstacles, road irregularities and ruts.

(g) Overloading and overspeeding take the "life" out of rubber.

297. *CHANGING CANTONMENT OF COMPANY.*—Unless all arrangements have been made for the company, the company commander must observe the following rules:

(a) If possible, always reconnoitre the new site well in advance of the change, and consult with the military authorities of the place. Make sure of suitable billets (or camping ground) for the men and of parking place for trucks. The two should be as near together as possible.

(b) The park for vehicles should never be on a dead end street, or on soft soil. The vehicles should be kept together, so as to be more easily guarded. If possible, keep them under cover of trees, so as to be less visible to enemy aeroplanes.

(c) Upon arrival, attend to the more important things first. Assemble the men and give them all necessary instructions. Establish a guard. Billet men, park the vehicles, find out where to draw rations, and establish kitchen and mess facilities.

(d) Arrange for garbage disposal.

(e) Construct latrines, if necessary, according to the standard specifications.

(f) Be sure of a good supply of drinking water and water for washing.

(g) Look up existing rules of the town, and establish police rules governing the men.

(h) Arrange for telephone connections.

(i) Find out location of nearest medical officer.

(j) Ascertain the location of the service park the company is assigned to.

(k) Arrange for gasoline, oil and wood supplies.

(l) When changing cantonment, if arrangements have not been made beforehand for the company, the company commander *must*, after reconnoitering the general site of the new cantonment, consult with the French and with the American authorities of the town or district. If in the zone of the armies, the "Major de Cantonnement" or military commander of the town will be looked up. Otherwise the "Maire" (Mayor).

(m) On leaving the cantonment, the company commander should make it a point to see that it is left clean. If desirable, a certifiate may be obtained from the French Authorities in proof of the fact that no material damage was caused by the company during its stay. (Called a "Certificat de bien vivre.").

REGULATIONS FOR DEPOT TRANSPORT COMPANIES

IN THE S. O. S.

Motor Transport Companies attached to the various headquarters, and doing depot work instead of convoy work, will observe the following regulations:

298. *PASSENGER CARS:*

(a) Passenger cars will not be assigned permanently to individuals without the approval of the Commanding General, S. O. S.

(b) When an officer desires a passenger car for a trip of more than 60 kilometers, or for a period of more than four hours, his application must receive the approval of the Chief of his Department.

(c) Application for car for trips of more than 24 hours must be submitted the day before, and upon returning the officer must sign the necessary certificate for commutation of rations for the driver. In no case will motor transportation be requested when rail transportation can be used to equal or better advantage.

(d) When practicable, two or more officers travelling in the same direction will utilize the same car. The senior is responsible for the car and must see that the traffic rules are observed. If the car is kept out after 8:00 o'clock P. M., a note, stating the time and place he was released, will be furnished the driver.

(e) All cars will be in the garage from 8:00 o'clock P. M. to 6:30 A. M., and any person who keeps a car out between these hours will furnish the driver with a memorandum, to be turned in at the garage, stating why the vehicle was kept out and when and where it was dismissed. All drivers upon dismissal will return immediately to the garage and report in. All drivers before leaving the garage will report out to the non-commissioned officer in charge.

299. *MOTORCYCLES.*—Motorcycles for passenger and courier services will be assigned by the C. O., Headquarters Garage.

300. *MOTOR TRUCKS.*—Application will be made to the garage one day in advance whenever practicable. In order to use transportation to the best advantage, the approximate tonnage to be moved should be given instead of an estimate of the number of trucks. Trucks will not be used as passenger vehicles except in carrying large parties to and from work, or for the transportation of troops.

301. *PASSENGER REGULATIONS:*

(a) The senior officer present is responsible for the car and observance of traffic rules.

(b) Whenever practicable, two or more officers travelling in the same direction will utilize the same car.

(c) If the car is kept out after 8:00 P. M., a note stating the time and place the driver was released will be furnished him.

(d) A copy of "Passenger Regulations" printed on a suitable card should be conspicuously placed in the tonneau of every car.

302. *POLICE REGULATIONS.*—All Provost Marshals and Military Police are charged with enforcing these regulations, and they will report in each case the date, time, place and number of the car and the name of the driver, if obtainable, and the cause of the report. They are especially directed to report all motor vehicles found out of the garage between 8 o'clock P. M. and 6:30 A. M.

USEFUL INFORMATION

303. *INSTRUCTIONS FOR HANDLING AMMUNITION:*

In handling all types of ammunition, care must be taken that crates are not broken or, if uncrated, that the copper bands at base of shells are not scratched or deformed. Damaged bands render the shells not only useless, but dangerous to fire.

Do not allow colors painted on shells to be effaced. They were put there for a purpose and are necessary.

Protect ammunition from sun and rain; both are harmful to the high explosive filling.

When fuses are attached to shells, do not handle by fuses; you may destroy the protective cover and ruin the fuse. Where fuses are not attached, plugs replace them. Should one of these fall out, put it back at once.

When handling gas shells, be provided wtih a mask to protect against leaky shells.

All ammunition is highly explosive, therefore dangerous. Do not smoke while moving it, and HANDLE WITH CARE.

304. *CLASSES OF FRENCH ROADS:*

(a) In France there are four classes of roads. The kilometer posts bear, on the side parallel to the road, the number and the designation of the road, i. e.,

N. (Route Nationale 7)	Main Highway N° 7
7	First Class
D (Route Departmentale 7)	Department Road
7	N° 7, Second Class
GC 42 (Chemin de Grande Communication 42)	Main Communicating Road 42, Third Class
IC 40 (Chemin d'Interet Commun. 40)	Public Road, Fourth Class

(b) There are also on the French highways blue enameled metal direction signs giving the numbers of the roads, and the names of the towns followed by their distance. In the center of the towns and villages, usually on the most important municipal building, will be found one of these signs, bearing the name of that town or village. In this case the name is not followed by any distance figures. In addition to the above will be found direction and other signs in English, both along the road and in cities and towns. These will be added to as conditions permit.

(c) At certain points along the routes there have been established U. S. Stations where gasoline and oil, also other motor supplies, may be obtained. Arrangements have also been made at certain other points to get fuel and lubricants from French Units. At these stations supply receipt books must be used. These books may be obtained by application to the Gas and Oil Branch,

Office Chief Quartermaster, Hq., S. O. S. The stations mentioned above are shown both on the route maps and detailed route sheets.

305. *PASSES:*

(a) The French rules of circulation provide that each vehicle going into the zone of the armies or into certain zones called reserve zones, shall be furnished the necessary passes to identify it when travelling in that locality. The French zone of the armies corresponds approximately to our advance zone of the Service of Supply. The reserve zones correspond approximately to our base sections, and also include the French territory contiguous to the Spanish, Italian and Swiss frontier.

(b) The French regulations provide that single vehicles moving on pneumatic tires shall be provided with pink passes (Permis Rouge); that single vehicles travelling on solid tires shall be provided with an order of movement; that a number of vehicles, either on solid or pneumatic tires, travelling as a convoy, shall be provided with an order of convoy. The pink passes are usually good for circulation for one month, whereas the orders of convoy and orders of movement are only good for a single trip.

(c) The M. T. Officer will obtain from the French authorities at his station the passes outlined above and will provide the Pilot or Convoy Commander with such as he may require.

306. For weights and amounts of materials which can be loaded into motor trucks see tables in Chapter XV. These tables are intended merely as a guide and are subject to revision.

CHAPTER XI.

CARETAKING

GENERAL

307. The problem before officers responsible for caretaking of motor vehicles is to maintain the vehicles in a serviceable condition. This can be done only by giving constant attention to minor repairs and correcting larger defects before they endanger the reliability of the vehicle.

308. Regular and systematic technical inspections by officers are essential in order to both make sure that the vehicles are receiving the proper car and to enable the officers commanding the vehicles to advise higher authority of their reliability.

309. A vehicle whose mechanical condition is such that it is apt to break down should be used on duties where the failure of the vehicle would interfere least with other operations. Instructions covering technical inspections given in this manual will be carefully noted and followed.

310. Intelligent care demands a thorough knowledge of the particular type of vehicle operated by a company. The manufacturer's instruction books, furnished as a part of the vehicle equipment, contain valuable information and should be carefully studied by both officers and the enlisted men.

311. Each operating unit will be assigned to a definite service park for all repairs which require service or overhaul as distinguished from caretaking.

CARETAKING RULES

312. The following rules are for the guidance of drivers as well as of officers and non-commissioned officers. They represent the minimum of attention to be given to vehicle maintenance. Company commanders are held responsible for their observance.

(a) Care must be given to appearance as well as mechanical perfection. See that the body is cleaned out, wheels free from mud and the engine and all mechanical parts are wiped clean and free from any excess oil and dust.

(b) Be on the lookout at all times for all leaks and unusual noises. Find the cause, and, if possible, eliminate it immediately.

(c) In screwing all grease cups, make sure that the grease has actually been poured into the bearings.

(d) Be on the lookout at all times for needed adjustments. When one is necessary on any part, have it done immediately.

(e) Never, under any circumstances, fill the gasoline tank or work on the carburetor in the presence of a naked flame or oil lantern.

SPECIAL RULES FOR MOTOR TRUCKS AND CARS

313. *AFTER EACH RUN.*—Fill up gasoline tank, including reserve supply, replenishing oil in motor. If possible, this should be done during daylight, as night filling is very conducive to waste of gas and oil. Fill radiator, oil lamps, lanterns, headlights and generators.

Drain a small amount from carburetor to make sure there is no water or sediment in it.

In freezing weather follow instructions given in "Instructions for Cold Weather."

Remove mud, dust and dirt from the immediate proximity to joints and moving parts, such as reach rod joints, spring shackles, distance rod joints, torsion rod joints and spring.

Turn down all grease cups one or two turns; oil all necessary places with an oil can.

Tighten all loose nuts, bolts, and screws, including screws and bolts in woodwork.

Wash entire truck whenever the opportunity presents itself.

314. *AT THE END OF EACH 250 MILES.*—Fill all grease cups and see that *oil holes* are not stopped up.

Clean motor and pan under motor. Clean spark plugs and oil ignition device with one or two drops of oil. *No More.*

Examine clutch and extracting collar. Never permit a clutch to become "rough" and "grab." Be sure that extracting collar is thoroughly lubricated.

Examine transmission. Fill with lubricant of the prescribed kind, if necessary.

Examine brakes. Adjust tension if necessary and oil all brake rods and connections. Examine lining to make sure that it is in good condition.

If chain driven, examine tension of chains. Tighten if necessary. In tightening, care should be taken to adjust both sides alike to maintain the alignment of rear wheels. Chains should never be too tight.

315. *AT THE END OF 1000 MILES.*—Drain crank case, clear oil strainers and wash out with kerosene. Fill with fresh oil. Save old oil to return to the service park.

Jack up body and clean and lubricate spring leaves.

If chain driven, remove chain, bathe in kerosene and clean with brush and relubricate.

Examine all grease boots and universal joints and, if necessary, repack with grease.

Repack steering gear with grease if necessary.

Examine differential and, if necessary, replenish with oil.

316. *AT THE END OF 5000 MILES.*—Drain transmission and wash out with kerosene. Refill with the prescribed lubricant.

Drain rear axle and differential housing, wash out with kerosene and refill with the prescribed lubricant.

Jack up all wheels, remove and repack bearings with grease.

If possible, without undue amount of trouble, inspect all motor bearings and make such adjustments as are necessary.

Diligent compliance with above rules will keep motor equipment out of the repair shop. Commanding officers will be held responsible for the enforcement of these rules.

SUMMARY OF ENGINE TROUBLES AND THEIR CAUSES

317. *ENGINE FAILS TO START.*

1. Gas mixture too lean.
2. Water in gasoline.
3. Water or congealed oil in commutator.
4. Gasoline supply shut off.
5. Carburetor frozen.
6. Carburetor flooded.
7. Water frozen in gasoline.
8. Coil switch off.

318. *ENGINE IRREGULAR AND LACKS POWER.*

1. Poor compression (leaky valves or piston rings).
2. Gas mixture too rich or lean.

3. Spark plugs dirty.
4. Air leak in intake manifold.
5. Weak exhaust valve spring.
6. Weak intake valve spring.
7. Too great clearance between valve stem and push rod.
8. Gap between spark plug points improperly adjusted or porcelain broken.
9. Commutator contact imperfect.
10. Motor overheated.
11. Spark excessively retarded.

319. *ENGINE STOPS.*

1. Gasoline tank empty.
2. Water in gasoline.
3. Flooded carburetor.
4. Dirt in carburetor or feed pipe.
5. Magneto wire loose.
6. Overheated from lack of oil or water.
7. Gas mixture too lean.

320. *ENGINE OVERHEATS.*

1. Lack of water.
2. Lack of oil.
3. Fan belt torn, loose or slipping.
4. Carbon deposit in combustion chamber.
5. Spark retarded too far.
6. Gas mixture too rich.
7. Water circulation retarded by sediment in radiator.
8. Dirty spark plugs.

321. *ENGINE KNOCKS.*

1. Carbon deposits on piston heads.
2. Loose connecting rod bearing.
3. Spark advanced too far.
4. Engine overheated.
5. Loose crankshaft bearing or worn crankshaft.
6. Worn wrist or crank pins.

SPECIAL RULES FOR MOTORCYCLES

322. After each run (to be done as soon as the motorcycle returns from run):

(a) Fill gasoline and oil tanks. Mobile "B" (in winter, "BB") oil, or an oil of equal fire test and body, *must* be used for motor lubrication. Under no condition should 600-W in any form be used in motors.

(b) Fill the oil lamps and examine the tubing from the presto-lite tank to the headlight for leaks. See that the presto-lite tank contains enough gas for a night's run.

(c) Remove mud and dirt from places in immediate proximity to moving parts, such as wheel hubs, hinge pins, bell crank pins, rear frame hinge pins and handle bar control mechanism.

(e) Examine machine for, and tighten all loose nuts, screws, etc. Adjust, oil and tighten chains.

(f) If a sidecar is used, and if the machine has been used in mud, the sidecar wheel bearings will be cleaned and repacked with a good grade of cup grease. This will prevent the wheel cone trouble which is so prevalent at the present time.

(g) Wash entire machine if possible.

323. *AT THE END OF 250 MILES:*

(a) Clean entire machine thoroughly.

(b) Clean spark plugs, oil magneto (only a drop or two), clean carburetor (under supervision of the mechanic).

(e) Examine and regulate tension of brakes.

(f) See that valve tappets are properly adjusted.

(g) Remove, clean and repack sidecar wheel bearings.

(h) Examine all wirings as to insulation and connections.

(i) Go over all nuts and bolts. Be careful not to strip threads of bolts.

(j) Drain crankcase, flush with kerosene and fill with fresh oil. Be sure to replace drain plug after this operation, and inject fresh oil into crankcase by use of a hand pump. Three or four pumpfuls will suffice.

(k) Remove chains, bathe in kerosene, and thoroughly clean with a brush. After this operation the chains should be slushed with a heavy oil before being replaced. Keep the chains properly adjusted at all times.

(l) Test the mechanical oil pump for air locks.

(m) On Indian motorcycles see that the rear fork hinge pin is working properly and is properly lubricated.

SUMMARY OF ENGINE TROUBLES AND THEIR CAUSES

324. *ENGINE FAILS TO START.*

1. Gas mixture too lean.
2. Water in gasoline.
3. Carburetor auxiliary air valve open.
4. Gasoline supply cut off.
5. Carburetor frozen.
6. Carburetor flooded.
7. Water frozen in gasoline tank or feed pipes.
8. Magneto points improperly adjusted.

325. *ENGINE IRREGULAR AND LACKS POWER.*

1. Poor compression (leaky valves, worn or broken piston rings).
2. Gas mixture too rich or too lean.
3. Spark plugs dirty.
4. Air leak in intake manifold.
5. Weak intake or exhaust valve springs.
6. Improper clearance between valve stems and push rod.
7. Gap between spark plug points improperly adjusted or porcelain broken.
8. Magneto lead wires short-circuited by insulation being broken through coming into contact with motor.
9. Motor overheated.
10. Retarded spark.
11. Magneto breaker points improperly adjusted.

326. *ENGINE STOPS.*

1. Gasoline tank empty or shut-off valve closed.
2. Water in gasoline.
3. Flooded carburetor.
4. Dirt in carburetor or feed-pipe.
5. Magneto wires loose.
6. Gas mixture too lean.
7. Motor "frozen" from lack of oil.

327. *ENGINE OVERHEATS.*

1. Lack of oil.
2. Carbon deposit in combustion chamber.
3. Spark retarded.

4. Gas mixture too rich.
5. Allowing motor to run while standing still.

328. *ENGINE KNOCKS.*

1. Carbon deposit on piston heads.
2. Loose connecting rod bearings.
3. Engine overheated.
4. Loose crankshaft bearings or worn crankshaft.
5. Worn piston cross head pins.
6. Worn pitman rod upper bushings.

INSTRUCTIONS FOR COLD WEATHER

329. Upon the approach of the winter season it becomes the duty of every member of the M. T. C., and particularly those responsible for the care and upkeep of motor equipment, to see that all necessary precautions are taken to prevent damage incident to the freezing of water in radiation, cylinders and pumps of the motor transportation in their care. Experience has demonstrated the fact very clearly that cold weather need have no effect on the efficient operation of motor vehicles, provided reasonable and necessary precautions are taken to prevent freezing.

330. Officers and men responsible will be held strictly accountable for any damage due to freezing. The following instructions are published for the information and guidance of all concerned.

When freezing weather is anticipated, the responsible officer will see that the following precautionary measures against freezing are taken.

331. *AT NIGHT—WHEN RADIATOR CAN BE DRAINED.*

(a) Effort will be made to incline the car toward drain cocks by judicious selection of ground, or by tilting, by running certain wheels upon suitably placed hummocks, rocks, pieces of board or other material.

(b) The radiators, pumps and carburetors of all motor vehicles will be drained by opening the drain cocks at the lowest point in the circulating system.

(c) As a further assurance that no water remains in the system, the engine will be started and run slowly for one minute. Shut off the gasoline supply at the tank, thus allowing the engine to "die" when the remaining gasoline in the carburetor and line has been used.

(d) After the engine has stopped, carburetor should be drained, as very often a few drops of water will have collected at the bottom. This procedure will effectually empty every particle of water from the engine and evaporate any remaining moisture around the cylinders, pump and radiator.

(e) If the radiator is hot, do not replace filler cap tightly. One or two turns will answer, as very often the metal contracts, thus making removal difficult in the morning. When caps are hinged or clamped, do not entirely close same.

332. *AT NIGHT—WHEN RADIATOR CANNOT BE DRAINED.*

(a) Heaters will be used under the hood to prevent the water from freezing. Side lamps may be used if special heaters are not available.

(b) If anti-freezing mixture cannot be obtained, motors should be kept warm by running for one-minute periods, say every two hours or oftener, according to temperature. Even when anti-freezing mixture is available, intermittent running is desirable to insure facility of starting by keeping water reasonably warm.

333. *IN DAYTIME—VEHICLE STANDING STILL.*—Hood should be covered. Burlap bags filled with straw or dry leaves will serve for this purpose when better means are not available.

334. *IN DAYTIME—VEHICLE RUNNING.*—In zero weather water will freeze in the radiator even when the engine is running. Steps must therefore be taken to provide suitable aprons of canvas or other matrial to cover the radiators.

If radiator and hood covers now being manufactured at the Reconstruction Park cannot be obtained in sufficient number, suitable covers will be improvised from material at hand.

335. *RELEASING BRAKES.*—Do not leave vehicles overnight with the hand brake set. This practice often results in bands freezing to the brake drums. If hand brakes are not set, blocking must be used.

336. *STARTING MOTORS IN COLD WEATHER.*

(a) If radiator is frozen, do not attempt to thaw it out by running the engine—use hot water.

(b) A very cold engine is difficult to start because the oil congeals in the cylinder walls and in the bearings. If it cannot be turned with moderately strong pressure on the crank, the water pump is probably frozen. Thaw it out by pouring hot water over it before exerting too much force on the crank. If this is not done, the coupling will be sheared or the propeller broken loose from the shaft. If the cooling system has been drained and hot water can be obtained for refilling, cranking will be easier. The consequent warming of cylinder walls will assist in the vaporization of the gas and make the engine start quicker. Warming the intake manifold, flooding the carburetor and pouring a small quantity of gasoline into the cylinders through the priming cocks are all helpful in getting a cold engine started. Take care not to flood the engine with gasoline. The engine runs best and works most efficiently when operating at approximately the same temperature as in summer weather. Part of the draft through the radiator may be cut off by keeping the radiator partially covered, and in very cold weather it may be advisable to remove fan belt also.

(c) A hose attached to a muffler of a running engine will be of advantage in thawing frozen parts or warming cold parts of other cars.

337. *DRIVING ON ICY OR FROZEN ROADS.*

(a) If the wheels are "frozen in" deeply, loosen them up with a jack before attempting to start the truck, or severe strain will be thrown upon all of the driving mechanism. Take care not to injure tires.

(b) When necessary to use chains, put a complete set on both wheels. One or two chains will make the truck jerk forward, thus straining the entire driving mechanism.

338. *DRIVING ON MUDDY OR SNOWY ROADS.*

(a) On extremely muddy roads, where the mud is several inches deep, it will be necessary to use chains continuously. This precaution will aid traction and tend to prevent skidding. If the ruts in the road are extremely severe, it will be necessary to have chains on the front wheels. Such precaution is necessary only on roads of a "clayey" nature. In the event the driver has not taken the precautions of applying the chains and he finds himself in a position where he cannot get traction, he will be warned against slipping the rear wheels, inasmuch as "spinning" wheels only dig in deeper.

(b) When there is considerable snow on the ground, similar difficulty in traction will be experienced, and chains should always be used under these conditions. If chains are not available, pieces of rope or twisted canvas tied through the spokes will serve the purpose for traction temporarily.

(c) In cases where the driving must be done in snow or sleet storms, or on wet pavements, all drivers are warned against speed; but they are warned further not to allow the truck to lose its momentum, inasmuch as starting under these conditions will prove difficult.

339. *ANTI-FREEZING MIXTURES.*—The anti-freezing mixture to be issued will be the best obtainable. (See instructions on container.) The strictest economy will be observed, using this mixture only when absolutely necessary and in the quantities and for the class of cars prescribed.

It will be necessary to limit the use of this fluid, generally speaking, to staff cars. Experience shows that a calcium chloride preparation has a corrosive tendency, and is destructive to rubber hose, packings and electric insulations upon which it has dripped or spattered.

(a) This corrosion is due to the solution being used without proper dilution. When directions are followed, no serious trouble will result. The practice of adding too much of this solution must be guarded against.

(b) In some cases the solution is ineffective because of the constant renewal of water without maintaining a full strength mixture.

(c) In using any anti-freezing mixture it is essential to follow exactly the instructions furnished therewith.

CHAPTER XII.

INSPECTION

340. The inspections that should be held in all M. T. C. formations may be classified as (a) General, and (b) Technical. The first class includes inspection of personnel, quarters, mess, sanitation, camp, bivouac (or billet) equipment, and motor vehicles insofar as relates to their cleanliness, completeness and general upkeep. The second class includes technical inspections of the motor vehicles and their mechanism, to determine actual mechanical conditions and upkeep.

GENERAL

341. The general inspections of motor transport formations are either *formal* or *informal*. *Formal* inspections should be made by the formation commander at stated intervals, ordinarily weekly, and by higher commanders on stated occasions. *Informal* inspections should be made daily by formation commanders and as often as practicable by higher commanders.

FORMAL INSPECTION OF MOTOR TRANSPORT COMPANY

342. *FORMATION FOR INSPECTION.*—The formation for inspection will be either in line or column of sections. Interval between vehicles two yards; distance between sections fourteen yards. Passenger vehicles on the right of the front line of vehicles.

343. *POSITION OF "PREPARE FOR INSPECTION."*—Men will stand at attention, driver one foot from fender on side of driver's seat and on a line with the front of the radiator; assistant chauffeurs and mechanics, cooks and such other personnel in a position corresponding to that of the driver, but on the opposite side of the truck. Chief of section (assistant truckmaster) one yard to the right of the right truck of his section and on a line with the drivers. First sergeant (truckmaster) in line on right of rank, and one yard from chief of section. Company commander one yard in front of his vehicle. Other company officers on his left.

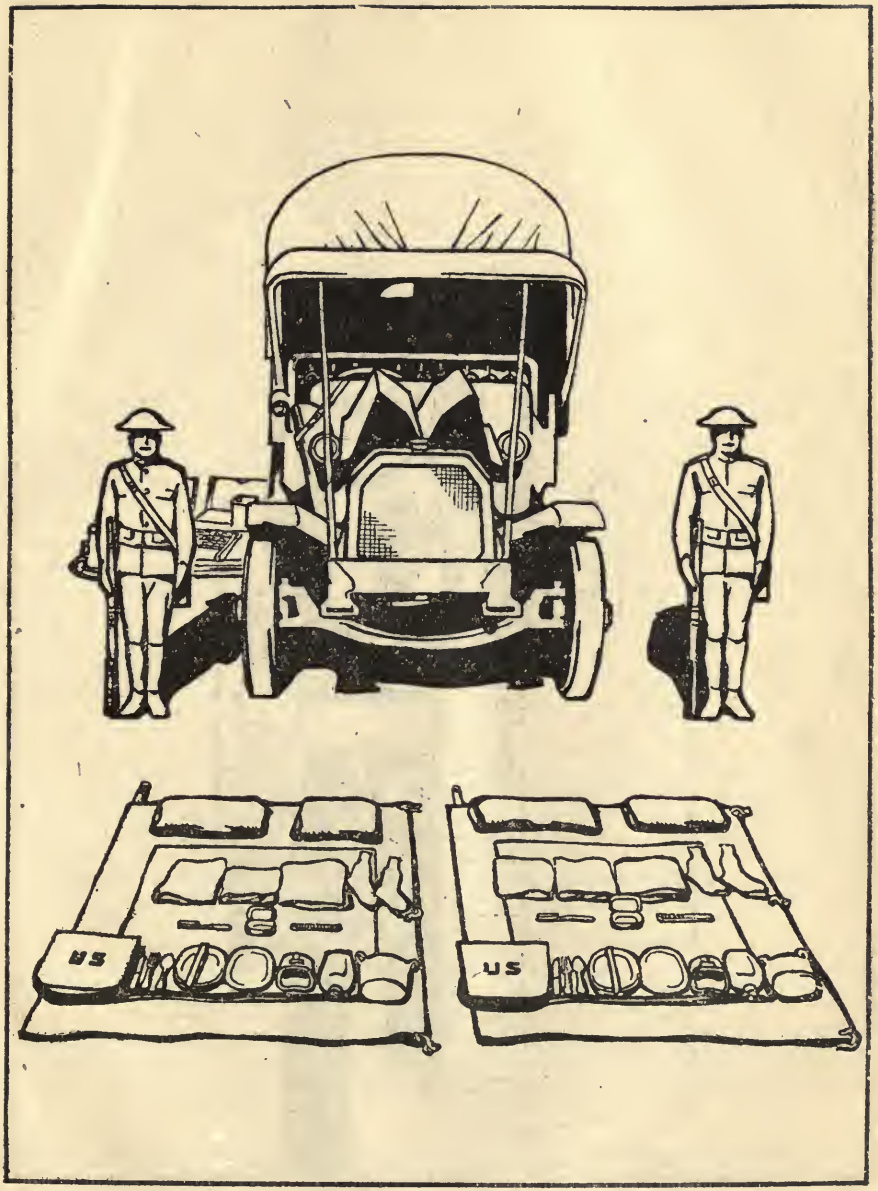
344. Bonnets of all automobiles and trucks will be raised to expose motor. All tool boxes or other such receptacles will be open to show interior. Seat cushions will be raised to expose under side.

345. All tools, kits and such truck equipment will be laid out in a unform manner on the ground alongside the tool box. Lash ropes, properly coiled, will be hung on front bows of either side of truck. Articles of personal equipment will be laid out uniformly on shelter half, rear of shelter half one yard in front of radiator and in front of each individual. All articles of equipment will be laid out so that stencils are plainly visible.

346. Diagrams indicating a method of laying out equipment will be found in this chapter.

347. As each vehicle is reached, the commanding officer will check off its number on the list of vehicles belonging to his command or attached thereto, in order to account for all of the vehicles for which he is responsible. Such other vehicles as are still part of the organization that are not in a serviceable condition, should be subsequently inspected at the repair shop.

348. The commanding officer will first examine the inspection chart or form covering the individual vehicle for which purpose the inspection report, found elsewhere in this manual, will be used, and which will have previously been filled out for the past week by the truckmaster or chief mechanic during the detailed inspection made by such enlisted man. (Note.—See Detailed Technical Inspection of Vehicles.) The commanding officer will note particularly what provision has been made for the repair or correction of any faults or defects which may have been discovered in such detailed examination, in order to satisfy himself not only that the exact condition of the vehicle is thoroughly known, but that suitable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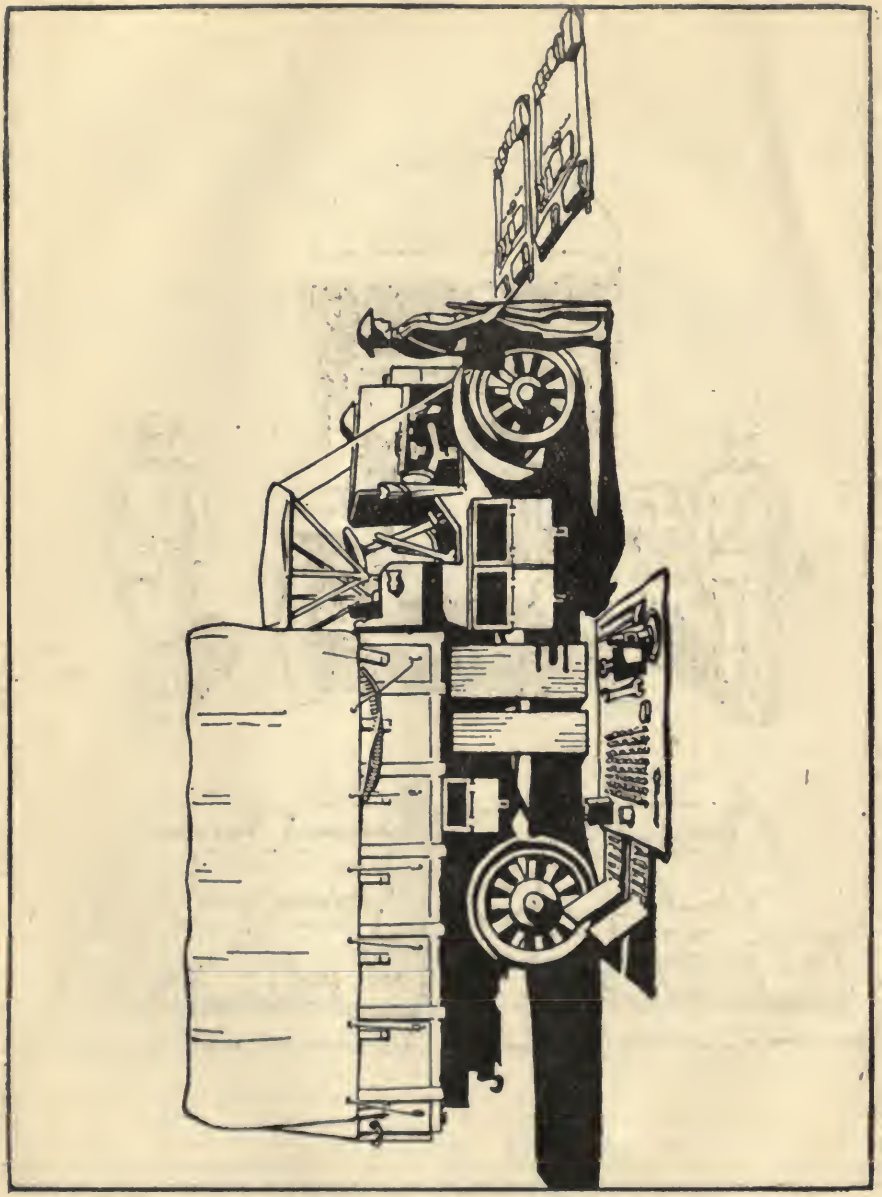


steps have been taken to rectify any unsatisfactory condition. The commanding officer will inspect the driver's log-book to insure that proper entries have been made therein, especially in regard to repair or replacement of a part which may have been made since the original issue of the vehicle.

349. The commanding officer will require the driver to start the engine and will observe its ease of starting, its quietness in running, its speed control of governor with throttle open and spark advanced, and vibration due to wear in third point suspension or mounting. The engine will then be stopped by throwing off ignition switch.

350. Steering connections from steering wheel to road wheels will be inspected for proper adjustment.

351. Tool kit and unit equipment will be inspected for comparison with authorized equipment.

352. While making this general inspection the commanding officer will observe particularly the cleanliness of the mechanical parts of the vehicle, especially at points of lubrication. The least accessible points on the chassis will also be inspected for cleanliness, as looseness of bolts, rivets, and similar connections, and incipient failures of brackets, frames or other structural parts can be detected in the process of thorough cleaning which would otherwise pass unnoticed until breakage had occurred. Cleanliness is required not for the sake of appearance, but to discover what is undernearth the dirt.

353. Inspections of vehicles at repair shops or other localities where placed for repair will not follow a specified routine, but inspection will be conducted to determine whether the necessity for repair has been due to improper operation, lack of cleanliness and lubrication or failure to maintain proper adjustments. This inspection will also disclose whether the necessity for repair has been anticipated by the responsible officer in charge of the operation of the vehicles and the repair organization advised in advance as to work which will be required by it on specified vehicles in order that said organization may plan its work accordingly, requisitioning spare parts if necessary, or providing for repairs not requiring replacement. The expert technical knowledge and experience of the officer in charge of a repair organization should be utilized in connection with vehicles developing trouble before the failures have occurred in service.

354. Upon completion of the inspection specified in the foregoing paragraphs, the commanding officer will initiate such procedure as may be necessary to insure the maintenance of the highest possible percentage of his equipment in serviceable operating condition.

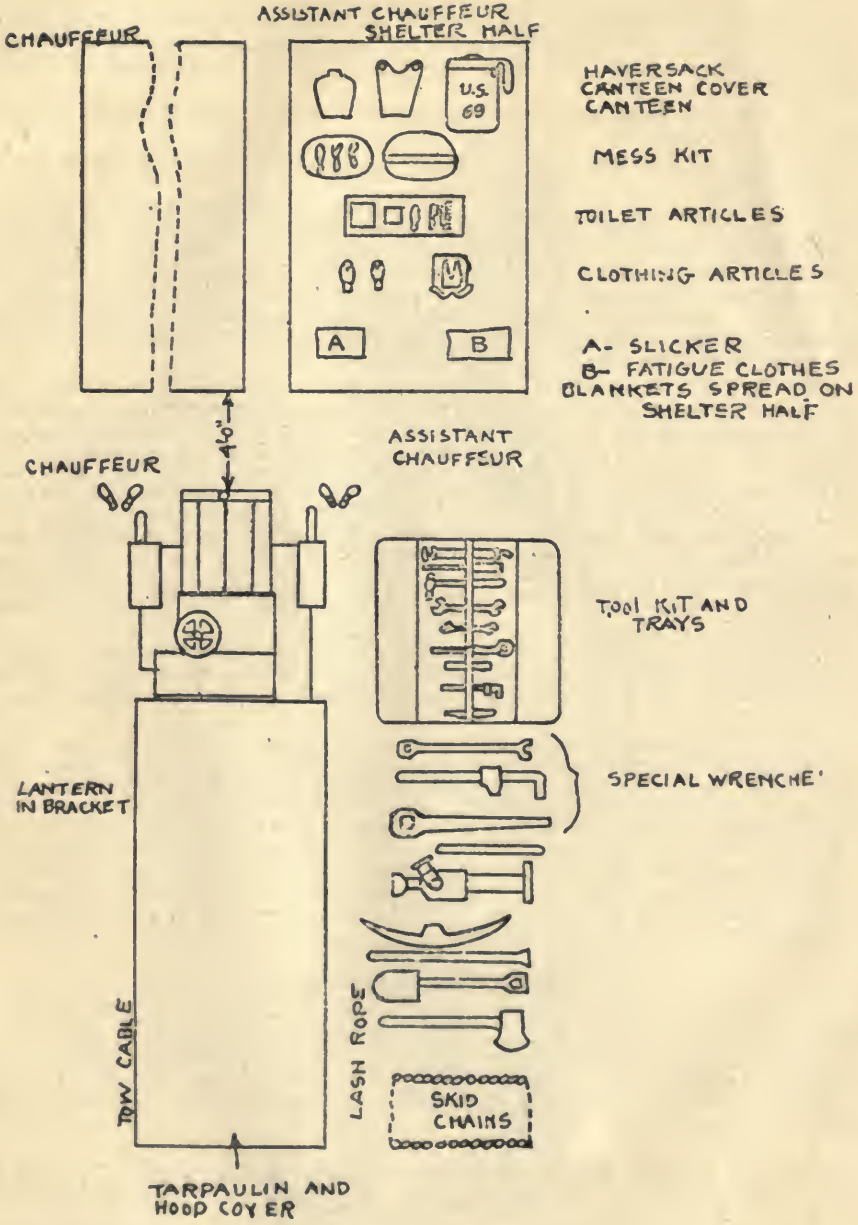
355. If a technical inspection is made at this time, it should be done in conformity to the procedure outlined in paragraph below pertaining to that subject. Ordinarily, the technical inspection should not be made at the same time as the general inspection on account of the length of time needed to make a detailed technical inspection, and because of the fact that to interpret most intelligently the mechanical condition of a machine it should be inspected when it is more or less dirty, so as to show up defects brought out in contrast by a slight coat of dust. After the vehicles and equipment are inspected, the camp, quarters and kitchens should be inspected in conformity with the procedure laid down in the various regulations and orders on that subject.

INFORMAL INSPECTIONS

356. Daily inspections will be made of camp and quarters as to sanitation, mess, etc. Quarters should be inspected for cleanliness, appearance and sanitary conditions. Kitchens should be inspected for general cleanliness, method of preserving and storing food, method of disposal of garbage, etc. Latrines should be inspected as to type of latrine, depth, odor, and method taken as precautionary measures against flies.

INSTRUCTIONS CONCERNING TECHNICAL INSPECTION OF MOTOR VEHICLES

357. Officers commanding truck companies and other organizations operating motor vehicles are responsible that all vehicles are maintained in a proper state of mechanical efficiency.


CHAUFFEUR
ASSISTANT CHAUFFEUR
SHELTER HALF
U.S. 69
A
B
HAVERSACK
CANTEEN COVER
CANTEEN
MESS KIT
TOILET ARTICLES
CLOTHING ARTICLES
A- SLICKER
B- FATIGUE CLOTHES
BLANKETS SPREAD ON SHELTER HALF
4'0"
CHAUFFEUR
ASSISTANT CHAUFFEUR
TOOL KIT AND TRAYS
SPECIAL WRENCHES
LANTERN IN BRACKET
TOW CABLE
LASH ROPE
SKID CHAINS
TARPAULIN AND HOOD COVER

358. In order to assure this, it is absolutely necessary that the vehicles be systematically inspected at sufficiently short intervals in order that defects may be discovered and corrected before they result in damage which will cause the vehicle to be inoperative.

359. All vehicles of operating organizations should be inspected by an officer thereof once in every 14 days and by a N. C. O. once in every 7 days. Vehicles on detached service will be reported back to their organization for inspection once every 7 days. If detached vehicles are operating too great a distance from their organization to make it practical for them to be reported for inspection at intervals of not more than 7 days, they will be reported to a nearer organization, which will make the inspection.

360. Truck company officers and officers of other organizations making inspections must acquaint themselves with the details of construction of the vehicles under their supervision, and must have a practical knowledge of all important defects which have to be guarded against and the precautions to be taken.

361. In order that inspections will not interfere with operating duties, arrangements will be made to inspect a few vehicles each day and not to inspect entire companies at the same time. An inspection chart will be kept showing the dates of inspection and the condition of the vehicle on the date of inspection. Any blank ledger may be used for keepng these charts, which will be made out and kept per model illustrated herein.

362. Reports of the inspections made by officers will be made on M. T. C. Form No. 174; one copy will be forwarded to the M. T. O. and one to the service park to which the vehicle is assigned for repair.

METHOD OF MAKING DETAILED TECHNICAL INSPECTION

In order that this technical inspection may be made in a systematic and thorough manner, the following procedure is described:

363. The officer making inspections should have a clerk to enter the observations on the inspection report form, and should use the driver, assistant driver and chief mechanic to assist in making the inspection.

364. The vehicle should *not* be cleaned immediately before an inspection, except in wet weather, as oil leaks, cracks, etc., can be more easily discovered on a dusty vehicle.

365. To prepare a vehicle for inspection the driver shall:

(a) Open the engine bonnet on both sides or remove same.
(b) Remove front floor boards.
(c) Remove the engine valve cover plates.
(d) Lay out tools and equipment beside the truck.
(e) Start the engine.

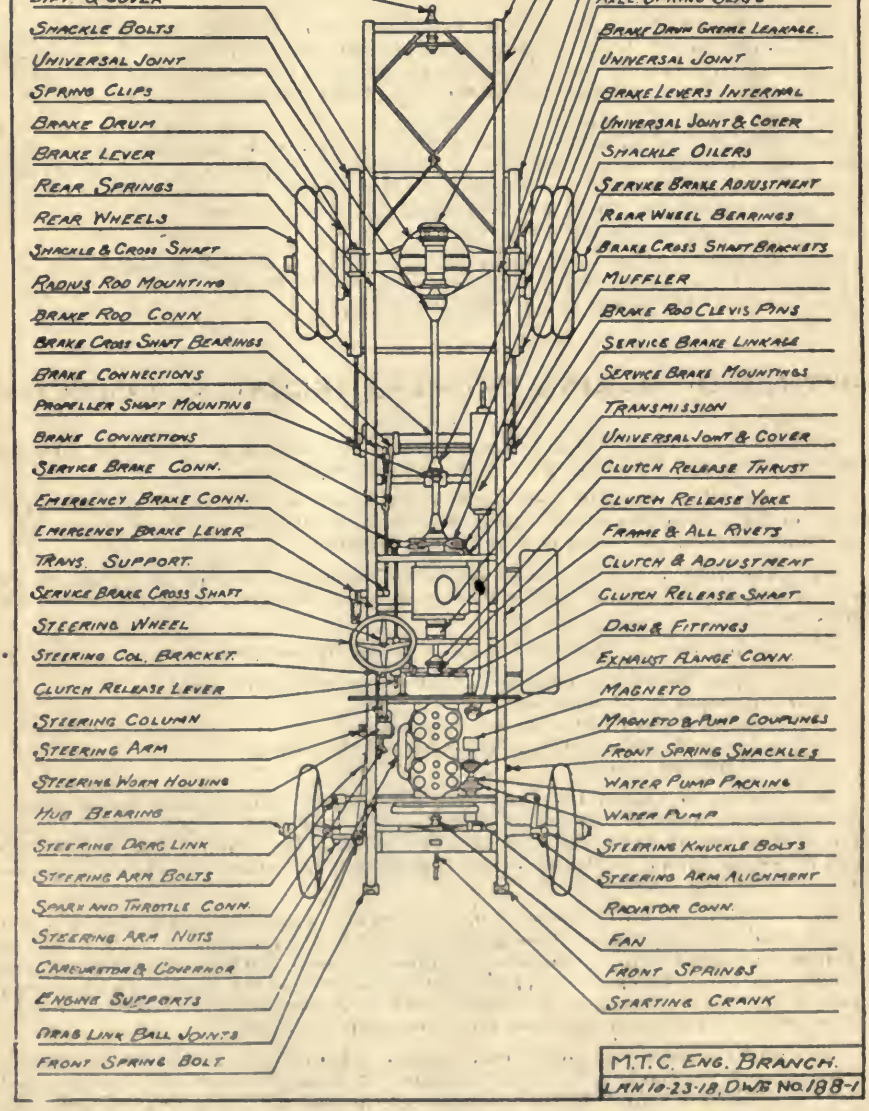
366. The order followed in inspecting the various points should be the same as the numerical order of the points listed on the inspection report form. The explanation of points to be observed is given below. The condition of points which need attention should be stated briefly and clearly and other points found in satisfactory condition marked O. K.

367. Certain points of inspection, on a truck, cannot be settled without driving or road test, such as: Smoothness of clutch engagement or clutch slippage. Transmission gear shifts. Brakes on clutch or wheel drums. Noises of all sorts, grinds, squeaks, rattles, etc. There may be certain other conditions that would make a driving or road test imperative and an inspector's decision should not be made until all points in question are thoroughly covered.

368. Defects requiring only minor repairs, which can be made by the company mechanic, will be marked "X"; for example: "2. Hose Connections: *Radiator inlet loose X.*" Defects requiring the attention of the Service Park, but not sufficiently serious to necessarily require immediate attention, will be marked "XX"; for example: "4. Compression: *Poor XX.*" Defects of a serious nature which require

MOTOR TRANSPORT CORPS.

MOTOR VEHICLE INSPECTION CHART (A)



M.T.C. ENG. BRANCH.
JAN 10-23-18. DWG NO. 188-1

MODEL.

Inspection chart for the month of.....

U.S. Numbers	Dates Inspected																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
3060			O							O				X	SP	O					O					O				
3062		X	SP	SP	O				O							O						O							*	SP	SP
3063								O					O				O							*	OP	-	-	-	-	-	-
3065				O							O						*	SP	O						O					O
3067		O							X	O						X	SP	O				O							O	
3069				O						O					O						O					O				
3070			X	-	SP	O						O								O								O		
3071	O						O							X	O							O								O	
3075					X	SP	-	O							O						X	SP	O					O			
3077						O						X	SP	O						O						O					
3078		*	OP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O			
3079						O					O							O					O							O	
3085				O								O							O						O						
3087	O						O							O								*	SP	SP	O						
3088		O							O						X	O								X	SP	-	O				
3092						O							O								O							O			
3093	O						X	O						O				X	SP	O			O								O
3094				T	-	-	-	O							O						X	SP	O								
3096			O							O							T	-	O							O				
3102			O							*	-	-	-	-	SP	O								O						T
3104					O							O							O							X	SP	O			
1005		O									O						O						O							O	
1008						X	SP	O								O					O								O		
1875							O						O						O						O						
615			*	SP	O							O							O								X	SP	O		
683	X	SP	O						O							O						O							O		

INSTRUCTIONS FOR THE USE OF THE INSPECTION CHART.

O.—Found in good order when inspected.

X.—In need of light repairs; can be used.

*—Must go to the Service Park immediately, in no condition to run.

SP.—Vehicle is in the Service Park undergoing repairs.

OP.—Vehicle is in the Overhaul Park undergoing overhaul.

T.—Awaiting tires.

the immediate attention of the Service Park will be marked "XXX"; for example: "20. Clutch: *Slips badly XXX.*" Vehicles which are found with "XXX" defects are to be immediately sent to the Service Park, or the park is to be immediately notified of the trouble.

POINTS TO BE OBSERVED

COOLING SYSTEM

369. *RADIATOR.*

(a) Are there any leaks?
(b) Will water flow from drain cock? If so, is it very full of sediment?
(c) Is the passage of air through the radiator obstructed by dirt, etc.?
(d) Is the filter in position and the overflow pipe clear?

370. *HOSE CONNECTIONS.*

(a) Do any of the connections leak?
(b) Do any of the connections show wear and need replacing?

371. *CIRCULATION.*

(a) Is the fan in good working order?
(b) In the belt in good condition?
(c) Is the fan bracket tight?
(d) Does water circulate freely? (Take radiator cap off while motor is running and observe circulation.)
(e) If equipped with thermostat, does it function?
(f) Does pump leak around shaft?

MOTOR

372. *COMPRESSION.*

(a) Test the compression by switching off the ignition and slowly cranking by hand. Open all the compression cocks except the one on the cylinder being tested. Test each cylinder in turn, always pulling up on crank to feel the compression. This should be done when the motor is warm.
(b) Examine cylinder head joint (if detachable head motor), valve cap plugs and pet cocks for leaks.

373. *VALVE ADJUSTMENT.*

(a) Test tappet settings for proper adjustment. See vehicle manufacturer's instruction book for the proper clearance. To test clearance, have engine revolved slowly until tappet is in its lowest position, try different leaves of a "feeler gauge" between the tappet and valve stem; the leaf that "just goes" is the amount of clearance. Do not report in detail; simply state "O. K." or "to be readjusted."

374. *GOVERNOR.*

(a) If a vehicle has a governor, is it in working order? The condition can best be determined by driving or road test.
(b) Does governor show signs of having been tampered with?

375. *CARBURETOR.*

(a) Does the float overflow?
(b) Does the motor idle at proper speed?
(c) Are the gas connections tight?

376. *CONTROLS.*

(a) Examine ball joints and yoke and pin joints of spark and throttle controls for lost motion and proper functioning.

377. *OILING SYSTEM.*

(a) If pressure system, does the dash pressure gauge show proper pressure when motor is runnnig?
(b) Check oil level in crankcase.
(c) Is oil in crankcase in good condition and free from grit? Is the proper grade being used?
(d) Is oil filter in position and clean?

378. *GENERAL.*

(a) Are all bolts tight?

(b) Examine crankease arms for cracks.
(c) If engine is suspended from support beams, are the brackets tight? Is the support pin worn?
(d) Does engine "knock" from carbon?
(e) Does the engine "knock" from loose bearings?
(f) Does the starting crank engage and disengage properly?

IGNITION AND ELECTRIC SYSTEM

379. *MAGNETO.*

(a) Is the distributor clean?
(b) Is the breaker box clean?
(c) Test the magneto by disconnecting the cable from one spark plug at a time and holding the end of the same approximately $\frac{1}{8}$ of an inch from some unpainted metal part and observe whether or not spark jumps the gap while the engine is running.
(d) Is the coupling in good condition?

380. *CABLES.*

(a) Examine the high and low cables for broken insulation or signs of wear on the same.

381. *SPARK PLUGS.*

(a) Have spark plugs removed and examine them for proper setting, cleanliness and cracked or broken porcelains.

382. *GENERATOR.*

(a) Ascertain if the generator is operating properly by observing the volt meter or ammeter while the engine is running. Also check the approximate speed of "cut-in" and "cut-out." See manufacturer's instruction books for details concerning the generator.
(b) Are the wire connections on the generator tight?
(c) Is the commutator clean?

383. *STARTING MOTOR.*

(a) See that wire connections are tight and try the motor for correct operation.

384. *BATTERY.*

(a) Test the condition of the battery with a hydrometer. Gravity between 1275-1300 indicates battery in a fully charged condition. Gravity between 1200-1275 indicates battery is more than half charged. Gravity below 1200 but above 1150 indicates battery less than half charged. Gravity below 1150 indicates that the battery is in a run-down condition.
(b) Are the battery holding down devices tight?
(c) Is the battery electrolite up to the proper height?
(d) Is the battery clean?
(e) Are the battery terminal connections tight? Are they corroded?

385. *INSTRUMENTS.*

(a) Examine the dash instruments for condition and operation.

386. *WIRING.*

(a) Examine the wiring connections for tightness.
(b) Does insulation show wear?
(c) Are proper fuses in place?

FUEL SYSTEM

387. *GASOLINE TANK.*

(a) Are the fastenings tight?
(b) Examine the tank for leaks.

388. *GASOLINE LINES.*

(a) Examine all fittings for leaks.
(b) Are the lines properly supported?

TRANSMISSION SYSTEM

389. *CLUTCH.*

(a) Does the clutch disengage freely and properly?
(b) Are the disengaging thrust faces and disengaging fork fingers badly worn?
(c) Is the lubrication proper?
(d) If a cone clutch, is the leather in good condition? If discs, are the discs in good condition?
(e) Are the pedal shaft bushings badly worn? Is the action of the pedals correct?
(f) Is the clutch brake effective?

390. *GEAR BOX.*

(a) Does the case show any signs of cracks or oil leaks?
(b) Are the bolts which hold it in position loose or worn?
(c) Is the lubrication of the proper type and at the proper height?
(d) Do the gears engage freely and disengage freely? If the gears do not engage freely or if trouble has been experienced by the driver with the gears not remaining in mesh, the transmission case cover must be removed and the gears and bearings examined.

391. *CONTROLS.*

(a) Examine the change gear mechanism for wear and proper lubrication.

392. *UNIVERSAL JOINTS.*

(a) Are all universal joints properly lubricated?
(b) Are the dirt protectors in good condition?
(c) *Do any of the universal joints show signs of excessive wear.

393. *DIFFERENTIAL.*

(a) Examine the housing for cracks and oil leaks.
(b) Are all joints and bolts tight?
(c) Is the truss rod tight?
(d) *If the vehicle is worm drive, does the worm have excessive end play (more than approximately 1/6")?
(e) **Does the differential function freely and smoothly?
(f) Is the lubrication of proper type and at proper height? Examine some of the lubricant, drawn from the bottom of the housing, for metal chips.

394. *SHAFTS AND CHAINS.*

(a) Do slip joints, if any, show excessive wear?
(b) Are all couplings tight?
(c) If previous trouble has been experienced with live axles breaking, have the axles removed and examine for any signs of twisting.
(d) In case of chain drive trucks:
  (d-1) Are chains properly adjusted?
  (d-2) Are the sprockets badly worn or loose?
  (d-3) Do the chains show excessive wear?
  (d-4) Are the chains properly lubricated?

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*Note:—To test points marked (*) have one wheel jacked up and the other blocked. Put low gear in mesh with clutch engaged and have wheel which is jacked up rotated forward and backward.

**Note:—To test point marked (**) disengage clutch and proceed as in (*) case, except have wheel revolved first in one direction and then in the other.

VEHICLE CONTROLS

395. *STEERING GEAR.*

(a) Is the wheel play excessive?
(b) Is the steering gear housing tightly bolted to the frame?
(c) Is the lubrication ample and proper?

396. *STEERING GEAR CONNECTIONS.*

(a) Are the drag link spring ball joints properly adjusted, lubricated and provided with covers?
(b) Are the steering connecting rod yoke pins and bushings worn? Are they properly lubricated?
(c) Are the wheels properly lined up?

397. *HAND BRAKES.*

(a) Are the drums tight on the wheels, or, if propeller shaft brake, is the drum tight on the shaft?
(b) Do the brakes release fully?
(c) If a lined brake, is the lining in need of renewal? If not lined, are shoes badly worn?
(d) If shoes are used, do they grip the drum properly and are they properly centered? Are the shoe pins free and lubricated?
(e) Does the equalizing mechanism work properly, and do brakes grip equally? This fact can be best determined on road test by observing rear wheels at time of sudden stops. Positive gripping of one brake shoe will be reported without fail, as this has a very harmful effect on the tire.
(f) Is the brake operating mechanism, cam or toggle worn? It is properly lubricated? Are the operating shafts free and well lubricated? Are the bushings worn?
(g) Are the rod yoke pins worn? Are they lubricated?
(h) Is the hand brake ratchet worn?
(i) Are the releasing springs in working order?

398. *FOOT BRAKES.*

(a) Are pedal shaft bushings worn?

FRONT AXLE

399. *KNUCKLE BEARINGS.*

(a) Are the knuckle bearings or bushing worn? If roller bearings are used, is the adjustment correct?
(b) Is the lubrication ample? Are the lubricators broken or lost?

400. *WHEEL BEARING ADJUSTMENT.*

(a) Are the bearings in good condition and is the adjustment proper? Roller bearings should have a small amount of end play when cold in order to take care of expansion from normal heating. The correct adjustment is to draw the retainer nut up and then back off ¼ of a turn before setting the cotter. In order to test a bearing adjustment, the inspector must familiarize himself with the feel of a properly adjusted like bearing and judge by comparison. On the heavier trucks it will be necessary to jack up the wheel to make final decision.
(b) Is the lubrication ample?
(c) Are both hub caps tight?

401. *SPRINGS.*

(a) Are there any broken leaves?
(b) Are any clips broken or missing?
(c) Are the shackle pins or eyes worn?
(d) Are the shackles well lubricated? Are any lubricators missing?
(e) Are the springs rusted between leaves?
(f) Are the springs to axle bolts tight?

REAR AXLE

402. *WHEEL BEARING ADJUSTMENT.*

Same as par. 400, (a), (b), (c).

(d) Is the lubricant from wheel bearing leaking onto the brakes?

403. *TORQUE ARM.*

(a) If the torque arm has a bearing at the rear, is it worn; is it free or frozen; is it well lubricated? If it has no bearing at rear end, is the means of fastening it on the rear axle housing tight?

(b) Is the front end support mechanism worn? Is it lubricated? If a spring mechanism is used at the front, are the springs properly adjusted?

(c) Does the torque arm show any cracks developing or loose rivets, etc.?

404. *DISTANCE RODS.*

(a) Are the bushings at either end frozen or worn?

(b) Are they well lubricated at both ends? Are any lubricators missing?

405. *SPRINGS.*

(a), (b), (c), (d), (e) same as par. 401, (a), (b), (c), (d), (e).

(f) If the spring chair is bushed on the rear axle housing, is it frozen? Is the lubrication proper? Has the spring chair developed any cracks?

(g) Are the bolts holding down the springs tight?

(h) If provided with center pins, are they sheared off?

(i) If provided with center band, is it cracked?

TIRES AND WHEELS

406. *TIRES.*

(a) Do tires need replacement?

(b) Are they loose on the wheels?

(c) If pneumatic, are they properly inflated?

(d) If solid, condition and appearance of cuts, runners and snipping.

(e) Do the tires show signs of excessive wear caused by wheels being out of alignment or by underinflation?

406 (a) *WHEELS.*

(1) Are wheels in good condition?

(2) Spokes tight?

(3) Spokes cracked or broken?

(4) Hub bolts tight?

CHASSIS

407. *FRAME.*

(a) Is frame bent in any place?

(b) If provided with a strut rod, is it tight?

(c) Are there any cracks developing (especially about center)?

408. *BRACKETS.*

(a) Are there any signs of fracture?

(b) Are all bolts or rivets, holding to the frame, tight?

409. *BUMPERS.*

(a) Are rear bumpers, if provided, in good condition and tight on frame?

(b) Are front bumper springs broken? Are all parts tightly bolted and in good condition?

(c) Is radiator guard in good condition?

410. *MUD GUARDS.*

(a) Are any badly bent, broken or missing?

(b) Are rivets or bolts from mud guard to brackets tight? Are bolts from brackets to frame tight?

411. *TOWING HOOKS.*

(a) Are hooks or springs broken?

(b) Are fastenings to frame tight?

BODY

412. *SEAT AND DASH.*

(a) Is the superstructure securely held to the frame?
(b) Are the seat and cushions in good condition?
(c) Is the dash broken or cracked?
(d) Are the lamp brackets tight?

413. *TOP.*

(a) Is the seat top in good condition?
(b) Is the body tarpaulin sound and watertight? Is it correctly lashed down?

414. *BODY.*

(a) Are the bolts and brackets which hold the body to the chassis broken or loose?
(b) Is the tailgate broken? Are any tailgate chains missing or broken?
(c) Are any body chains broken?
(d) Does body need any carpenter work?
(e) Is the tool box in good condition?
(f) Are the troop benches in good condition?
(g) Is the inside of the body clean?

EQUIPMENT

415. *TOOLS.*

(a) Any shortages against standard list?
(b) General condition of accessories?

416. *ACCESSORIES.*

(a) Any shortage against standard list?
(b) General condition of accessories?

SPECIAL NOTES

417. In making out Inspection Report, enter under "Special Notes" any points not covered in the body of the report. The outline of points to be inspected, given above, is intended as a guide and does not necessarily cover all points which may come up at inspection.

GENERAL CONDITIONS

418. Under "General Condition" the inspector will enter a statement concerning the vehicle as a whole and any comments which he thinks advisable to note concerning the way it is cared for and operated.

RATE SYMBOL

419. The same symbol as entered on the inspection chart will be placed very plainly in the lower lefthand corner of the inspection report. *It is very important that this be done and that the instructions on sample instruction chart be followed for determining the symbol to be used.*

420. The inspecting officer will enter in the Log Book of the vehicle the date inspection was made and the rate symbol, and sign the same.

MOTOR TRANSPORT CORPS

VEHICLE INSPECTION REPORT FORM

Organization..... Date.....

Vehicle .....
(Make) (Type)

U. S. No.....Motor No.....Total Mileage.....

COOLING SYSTEM—
1. Radiator .....
2. Hose Con's .....
3. Circulation .....

MOTOR—
4. Compression .....
5. Valve Adj. .....
6. Governor .....
7. Carburetor .....
8. Controls .....
9. Oiling System .....
10. General .....

IGNITION AND ELEC. SYSTEM—
11. Magneto .....
12. Cables .....
13. Spark Plugs .....
14. Generator .....
15. Start. Motor .....
16. Battery .....
17. Instruments .....
18. Wiring .....

FUEL SYSTEM—
19. Gas Tank .....
20. Gas. Lines .....

TRANSMISSION SYSTEM—
21. Clutch .....
22. Gear Box .....
23. Controls .....
24. Univ. Joints .....
25. Differential .....
26. Shfts. and Chains.....

VEHICLE CONTROLS—
27. St. Gear .....
28. St. Con's .....

FRONT AXLE—
29. Hand Brakes .....
30. Foot Brakes .....

REAR AXLE—
31. Knuckle Br'gs .....
32. Wheel Br'gs Adj.....
33. Springs .....
34. Wheel Br'gs. Adj.....
35. Torque Arm .....
36. Dist. Rods .....
37. Springs .....

TIRES—
38. Ft. Rt..... 39. Ft. Lt.....
40. R. Rt..... 41. R. Lt.....

CHASSIS—
Frame .....
43. Brackets .....
44. Bumpers .....
45. Mud Guards .....
46. Tow Hooks .....

BODY—
47. Seat and Dash .....
48. Top .....
49. Body .....

EQUIPMENT—
50. Tools .....
51. Access's .....

Special Notes: .....
.....
.....

General Condition: .....
.....
.....

Inspection made by.....

Rate (Rank).....
Symbol.....

NOTE: One copy to M. T. O. and one to the Service Park to which vehicle is assigned.

(M. T. C. Form 174.)

MOTORCYCLE COMPANIES

In the inspection of motorcycle companies, the following procedure is recommended:

GENERAL INSPECTION

421. The formation for inspection will be either in line or in column of sections. The interval or distance between motorcycles two yards, interval or distance between sections 10 yards. In the event that a truck is a part of, or attached to the company, same should be placed on the extreme left flank of company when in line, six yards from the last machine. At the command "Prepare for Inspection" the men will stand at attention, driver one foot from the front wheel hub on the side of driver's seat. Assistant cyclemaster in a corresponding position with the driver, but on the opposite side of the right motorcycle in his section. Spare drivers and mechanics in a position corresponding to that of the driver, but on the opposite side of the motorcycle in which he rides. Company commander one yard in front of his motorcycle which, when the company is in line, will be the leading motorcycle, and when in column of sections will be 10 yards in front of the center of the first section. Other company officers will be in similar position on his left.

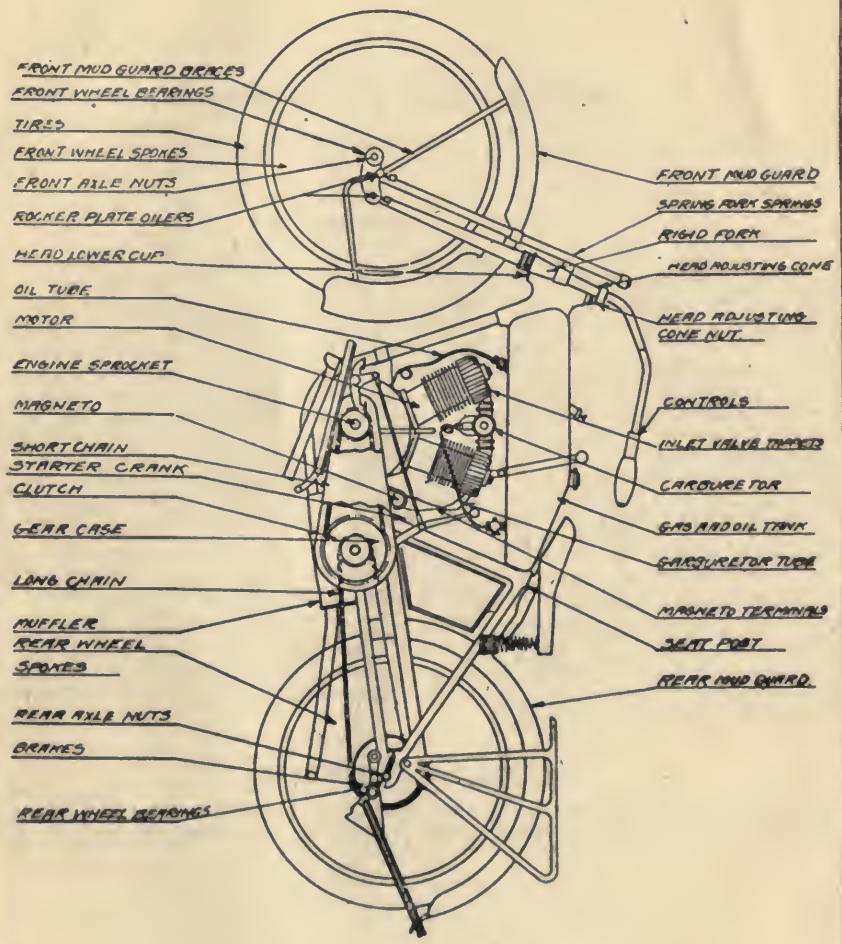
422. All articles of personal equipment will be displayed on the shelter-half, two yards directly in front of the man to whom they belong.

423. Motorcycle equipment, such as tools, pumps, etc., will be displayed on the ground, opposite the right center of the shelter-half. All tool boxes and other receptacles will be opened to show the interior, seat cushions, if detachable, will be raised for inspection. Machines will be raised on their stands, to permit whirling of wheels, for inspection.

TECHNICAL INSPECTION

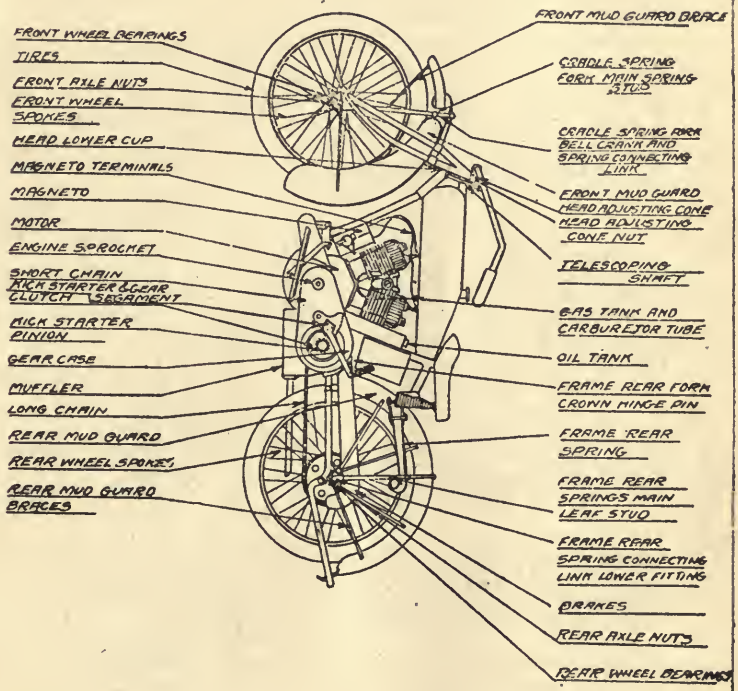
424. For detailed inspection of motorcycles, the following form and outline is recommended to be followed in principle as described for trucks and motor cars.

INSPECTION CHART FOR HARLEY-DAVIDSON MOTORCYCLE



M.T.C. ENG. BRANCH
N.W.R. 14-23-18 DWG. NO. 254

INSPECTION CHART FOR INDIAN MOTORCYCLE



MTC ENG. BRANCH
N.W.R. 10-23 18 DWG NO 256

MOTOR TRANSPORT CORPS

MOTORCYCLE INSPECTION REPORT FORM

Organization ..... Date.....
Vehicle .....
(Make) (Type)
U. S. No.....Motor No.....Total Mileage.....

MOTOR—
1. General Appearance .....
2. Compression, Front.....Rear....
3. Running Condition .....
4. Inlet and Exhaust Springs.....
5. Drain Oil and Examine.....
6. Carbon, Front.....Rear.....
7. Adjustment of Valves.....

FRAME—
8. Main Frame .....
9. Springs, Front.....Rear.....
10. Rear Fork .....
11. Lubrication of Frame Conn's....
12. Head Cones .....

TANKS—
13. Gasoline, Right.....Left.....
14. Tank Brackets .....
15. Gas Lines .....
16. Oil Tank .....
17. Hand Pump (oil).....
18. Oil Lines .....
19. Oil Pump (Mechanical).....

BRAKES—
Hand Lever and Cables.....
20. Inner Brake .....
21. Outer Brake Band.....
22. Adjustment, Hand.....Foot.....

WHEELS—
23. Cones, Front....Rear....Sidecar
24. Rims, Front.....Rear....Sidecar
25. Spokes, Front....Rear....Sidecar
26. Tires, Front.....Rear.....Sidecar

HANDLE BARS AND CONTROLS—
27. Bars .....
28. Grip, Right.....Left.....
29. Spark Cable or Rod.....
30. Throttle Cable or Rod.....

CHAINS—
31. Long .....
32. Short .....

GUARDS—
33. Chain Guards, Front....Rear....
34. Mud Guards, Front.....Rear....

STARTER AND CLUTCH—
35. Starter Crank and Pedal.....
36. Adjustment of Starter.....
37. Clutch, Hand Lever.....
38. Pinion Gear .....
39. Operating Efficiency Clutch.....
40. Clutch, Foot Lever.....

THREE SPEED GEAR CASE—
41. Gear Mesh, High.....
42. Intermediate .....Low.....
43. Gear Shift Levers.....
Quadrants .....Locks .....

SADDLE—
44. General Condition.....
45. Springs and Bolts.....

IGNITION—
46. Spark Plugs .....
47. Brushes .....
48. Cables .....
49. Adjustment of Magneto Points

CARBURETION—
50. Adjustment .....
51. Leaking Manifold .....

SIDECAR—
52. Alignment .....
53. Springs .....
54. Upholstering .....
55. Connections .....

MISC.—
56. Tools .....Horn .....
Lighting .....

Recommendations: .....
.....

Sig.....
(Inspecting Officer)

NOTE: One copy to the M. T. O. and one copy to the Service Park to which the vehicle is assigned.

M. T. C. Form 175.

CHAPTER XIII.

ORGANIZATION OF TRANSPORTATION WORK

GENERAL PRINCIPLES

425. The basic principle of operating efficiency of motor transportation is that a vehicle must be worked to capacity, both as to time and load. Every minute that the road wheels of a truck are idle is a dead loss. Every pound under a capacity load is a dead loss. From this principle certain fundamental operating rules may be deduced.

First.—Avoid an empty haul. Return loads should be provided for, and vehicles should be parked so that the least possible time will be lost going to or coming from work, and so that as small a distance as possible will be traveled with no load.

Second.—Load vehicles to capacity. Do not use a five-ton vehicle to carry a two-ton load. Use a vehicle of appropriate capacity.

Third.—Do not use two vehicles to do work that one vehicle can do within the required time limit. Use one vehicle eight hours rather than two vehicles four hours.

Fourth.—Reduce to a minimum the time required in the loading and unloading operations, and the entire time required for the necessary upkeep and supply operations to the vehicle.

Fifth.—Keep the vehicle in constant mechanical serviceability by constant inspection and care of the mechanism.

426. It is well recognized that departures from a rigid observance of these rules must normally be made, but any such departure must be justified by the circumstances of the particular case, and with a full realization that the total transportation return of the vehicle is being sacrificed thereby to extraneous but controlling factors.

APPLICATION OF THESE PRINCIPLES

427. Certain applications of these principles lie within the province of the personnel actually operating the vehicles, and certain applications are in the province of the authority that designates the transportation work to be done, or that has the responsibility of properly organizing such work.

428. The application of these principles, as far as affects the actual operating personnel, refers more specifically to the second, fourth and fifth rules stated above. This is a matter for instruction and discipline. The proper methods for the operation and upkeep of vehicles will be found under appropriate headings in this manual, and compliance therewith should be enforced.

429. But there is one phase of the application of these transportation rules that lies primarily within the province of the authority responsible for the proper organization of the transportation work. Considerations of efficiency, economy and necessity require the maximum transportation output from a given vehicle equipment. This can only be obtained by working from a central reserve, or what may be termed a "vehicle pool."

430. It is a common error to confuse the use of motor transportation with the use of a particular motor vehicle and driver. A person entitled to the use of motor transportation assumes that this authority means the assignment of a particular vehicle for his exclusive use, very much as if he had purchased a private vehicle. This is directly opposed to the principle of the vehicle pool, which is based on the idea that a person authorized to use motor transportation is entitled to have himself or his cargo, as the case may be, transported in the available motor vehicle that is most suitable for the nature of the journey or the work to be performed.

431. By pooling of transportation is meant the collecting of all vehicles used for general transportation purposes under one authority, and the assigning of transportation from this pool to meet the actual needs in each specified case. It

must be borne in mind that the creation of a vehicle pool indicates simply unity of control, and not that the vehicles must all be parked in one place. The location of parking places and the number thereof must be determined by the specific transportation requirements, and would be fixed in accordance with the principles of transportation outlined above.

432. Theoreticaly, the operation of all vehicles from one central pool would give the maximum transportation output with the minimum number of vehicles. But in practice certain factors entirely foreign to theoretical transportation efficiency enter. Such are the time and distance elements, when a given vehicle equipment is operating over a large territory, and certain necessities that require more or less permanent individual assignments of vehicles to be made. An example of this latter class would be an emergency car for an attending surgeon.

433. Without entering into a discussion of the subject, it may be stated that the essential principle in the working of a vehicle pool is to keep down to the lowest possible limit the number of local pools, as well as the number of vehicles excepted from the operation of a pool. In this, as well as in the case of the transportation principles stated above, the justification of an exception must be found in the necessity therefor, and such exception will be made with a full knowledge that the total transportation return of the equipment is being diminished thereby.

ORGANIZATION OF A TYPICAL POOL

434. The following outline is suggested for the organization of a standard motor pool. The vehicles in a pool generally consist of passenger cars, motor trucks, motorcycles and bicycles, along with the necessary repair facilities.

435. This outline gives the method for operating a standard type pool, but local conditions will govern to a large extent the details in the operation of the pool. Whether the vehicles will all be centralized at one station or scattered over numerous substations depends entirely upon local conditions, but the principles laid down will apply to all types of a motor pool.

436. First survey carefully the problem as to the amount of tonnage to be carried, the distances to which it is to be carried, the main points where most of the transportation will be used, the road conditions, and loading and unloading conditions for trucks; for passenger cars, the number of officers requiring transportation, whether the bulk of calls will be for short or long distance work; for motorcycles, the number of couriers necessary and distances to be covered; the same for bicycles.

437. After having determined the extent of service the motor pool is to supply, carefully survey the territory in which you will operate, map out the routes to be used, examine condition of roads, loading and unloading points, and draw up a scheme of movement, so that trucks will run the least distance empty, and when loaded will carry their maximum of tonnage, with good service; passenger vehicles will be so routed that trips can be standardized, useless single trips be eliminated and cars be used to the maximum of efficiency. The rules for motorcycles will be practically the same as for passenger cars.

438. Select a garage location suitably placed so that the maximum of efficiency and service can be performed. If possible, the proper buildings and grounds should be selected or built, and repair, storage and supply arranged for.

439. The survey will determine the types and numbers of vehicles necessary for the efficient operation of the pool. After these have been procured and the garage organized, as far as material is concerned, the next question is one of personnel.

440. There are three classes of personnel in a pool—administrative, executive and operative. The administrative section consists of the pool commander, clerks and the dispatcher. The executive consists of garage commander and those in charge of repair, storage and supply. The operative section consists of the personnel actually operating the vehicles.

441. The component parts of the pool are now ready for assembly; buildings, material and personnel. The next is the organization of the garage.

442. *ORGANIZATION OF THE GARAGE.*—The material has arrived and has been assigned to the representative units and property account taken up, checked and receipts taken from the drivers for their vehicles. The repair facilities are next arranged and the shop equipment organized. A stock room is then built and requisitions forwarded through channels for an initial stock of supplies, depending on the nnumber and type of vehicles. It is always best to remember, if possible, to keep the vehicles as near standard as possible; the fewer makes in one pool the better. The garage is now ready to operate.

443. The Motor Transport Officer should then arrange to have an order issued covering the operation of the pool, so that all concerned will be familiar with the procedure necessary to obtain motor transportation. After this order has been issued, all requests for motor transportation should be forwarded to the dispatcher, who in turn will issue the necessary orders for their execution.

444. *TYPE OF ORDER.*—Motor transportation assigned to this locality will be operated from a central garage and will be administered by a Motor Transport officer who will be responsible for its efficient operation. All motor driven vehicles operated by various corps will be pooled and turned in to the Motor Transport Officer to be operated by him. He will make such requisitions for personnel as necessary to properly operate the vehicles in the pool. All applications for motor transportation will be made to the office of the Motor Transport Officer. Automobiles will not be assigned permanently to individuals without the approval of the Commanding General. When it is necessary to detail for daily duty an automobile to an officer or a department, it is not necessary to detail the same vehicle and driver each day. Motor vehicles destined for a trip outside of the reasonable limits of the post, or for a duration of over four hours for passenger vehicles, must receive the approval of the chief of the department requiring that transportation. All requests for transportation will be submitted by 6 p. m. of the day before, but in emergencies the M. T. O. will furnish transportation, if available, on demand of the proper authority. When automobiles are detailed for an officer's use, one seat only will be assigned to that officer, so that he will not have exclusive use of the car, enabling other officers, depending on the local conditions, travelling in the same direction, to utilize the same vehicle.

445. Garage regulations will be included in the order. The hours that cars will return will be specified and will also depend on local conditions. Orders for motorcycles will be the same as for motor cars. There should also be included a paragraph cautioning everyone to use the strictest economy in motor transportation, so that vehicles may be kept to the maximum efficiency. The one responsible for useless waste of motor transportation is just as culpable as one appropriating public funds.

446. To organize a pool where vehicles are already operating, the steps are similar to those outlined above for the survey of the ground and work to be done, with the addition of the vehicles already on hand operating in that locality. After this survey has been completed all the vehicles operating in the locality should be drawn into the central station and, if an assigned vehicle is necessary, it should be reassigned. Vehicles should be rearranged with the endeavor to reduce the movement of vehicles operating, but the one prime factor must be observed, namely, that central control is always the most efficient and economical.

OPERATION OF THE MOTOR POOL

There are two classes of work to be performed by a motor pool—route work and depot work.

447. *ROUTE WORK.*—The term route work is used for long distance movement, where supplies or passengers are transported distances requiring vehicles to be away from their station for a time exceeding 24 hours. Vehicles may operate in route work singly or in convoys of two or more vehicles.

448. *DEPOT WORK.*—In this service trucks are ordinarily detailed to various warehouses and supply points for work under the personnel designated by the motor pool commander, and on work allowing them to park nightly in the perma-

nent park. Trucks are also operated on circuit service in depot work where a truck collects cargo from one or more points and redistributes the cargo in the local area. Passenger cars are operated the same as taxicabs.

DUTIES OF THE PERSONNEL IN OPERATING A MOTOR POOL

449. *POOL COMMANDER.*—Is charged with the efficient and economical operation of the pool.

450.—*DISPATCHER.*—A suitable non-commissioned officer is permanently detailed as dispatcher, assistants being detailed when necessary, so that one man will be constantly on duty within reach of the telephone or other means of communication. His duties are to properly record the receipt of orders for transportation and make out written orders for the vehicles to perform the work. His instructions are to be regarded as the orders of the pool commander and due regard given them. The following forms may be used by the dispatcher in carrying on his work:

(a) Type Form 1, shown below, which is a daily blotter giving a record of all transportatioon orders received and carried out.

(b) Form M. T. C. 162, which is the dispatcher's card for passenger cars.

(c) Type Form 3, which is the dispatcher's order for motor trucks. Each order for trucks is made out in triplicate, the original being retained, the two carbons being signed by the truckmaster, who keeps one for his own record and gives the other to the driver who will carry out the order. When the truck leaves the garage the driver signs the copy of the ordèr which is retained by the truckmaster. Upon reporting to his destination, the driver has his copy signed by the person to whom the trucks were ordered to report. He turns in this copy upon the completion of his work.

The garage will keep a suitable record of the work performed by its vehicles so that the whereabouts of each vehicle may always be a matter of record. Form M. T. C. 172 is used for this purpose.

451. *GARAGE COMMANDER.*—The duties of the garage commander are to properly see to the housing and care of the vehicles and personnel; that all rules and regulations pertaining to the operation of the garage are rigidly enforced; that fire prevention methods are taken, and that the repair and supply sections are properly operating.

452. *DUTIES OF SUPPLY OFFICER.*—He sees that sufficient supplies are on hand or requisitioned to properly take care of the vehicles in the pool, and keep such stock records and property records as are necessary.

453. *COMMANDER OF REPAIR SECTION.*—He sees that all vehicles are properly repaired when reported to the repair section for work.

454. *INSPECTOR.*—The inspector's duties are to see that the vehicles are kept in the best condition possible. Daily inspection should be made and written report of inspections submitted to the pool commander. If the inspector decides that a vehicle should go to the repair shop, he should make the report to the garage commander, who would make final decision as to what disposition is to be made of the vehicle.

455. *GARAGE CLERK.*—His duties are to keep records of the work done by vehicles, records of all transportation orders, and do such other paper work as is necessary for the administration of the garage detachment.

456. *DUTIES OF DRIVER.*—He keeps his vehicle and its equipment clean and in proper repair and working order. In order to do this he utilizes his spare time while not on duty and does not wait until his truck reaches the park to do all the minor work required thereon. He should be especially cautioned to attend to the proper lubrication of all parts of the mechanism of his vehicle, and to promptly report any defect noted or repair needed. In transporting supplies he will see that the truck is not overloaded, except on the direct order of a commissioned officer; that cargo is properly loaded and lashed. Ordinarily, he is responsible for its safe delivery. He should be familiar with the mechanism of

his vehicle and its proper operation, and for this purpose he should be thoroughly familiar with the contents of the instruction book issued by the makers of the truck. The chauffeur should be required to wear proper uniform when driving. He should be required to carry with him at all times a suit of fatigue clothes and thus avoid excessive clothing issues.

The duties of the driver shall also include the recording of the total weight of each load carried. Should his truck be overloaded, he will report the circumstances at once to the truckmaster; the recording of distance traveled with each load and the distance his truck is run with no load; the recording of the amounts and kinds of supplies used; the reporting of all defects which cannot readily be repaired by the chauffeur himself; the washing and general cleaning of all parts of the vehicle; the complete lubrication of all working parts, filling of oil lamps; the examination every day of both service and emergency brakes; the filling of storage battery with distilled water and the testing of solution with battery hydrometer; the care and repair of spark plugs; the draining of water and dirt from settling chambers of strainers in gasoline tank or gasoline pipe line.

457. The number of vehicles and amount of personnel depends entirely upon the size of the pool and the conditions under which it is going to work.

458. The object of a motor pool is to get under one operating head all of the transportation in the locality; it is better to operate under one head than under a dozen, both for the satisfaction of the service and the economical handling of the material and personnel. To successfully operate a pool, service and economy are the two factors that must be obtained. Otherwise the pool is of no value. In cargo carrying vehicles endeavor to operate with the least empty mileage; have the chauffeurs instructed to call up the office for loads if they have any distance to go empty. Passenger vehicles and motorcycles can be worked the same way, especially on route work. On depot work they operate the same as a taxicab business would operate—the vehicles are dispatched, perform their work and return to their station. Necessary dispatcher's records must be kept to insure proper operating of the vehicles. When cargo vehicles are ordered, find out the tonnage to be moved and the exact number of vehicles that can work at a given time; do not send ten vehicles to move a great amount of tonnage if only two vehicles can load at one time. Instruct the personnel to be courteous; the Motor Transport Corps means service; that is what it is producing.

EXTENSION TO OTHER FORMATIONS

459. The principles and general rules for operating a type pool may be extended to other formations, such as where several companies are operating at the same station. The commander of the transport units would ordinarily be the commander of the pool, and the various duties outlined in the operation of the pool would be carried on by subordinates of rank commensurate with the importance of the elements composing the pool.

460. The same principles apply to the largest pool, which would normally be the Army Transportation, where the commander-in-chief would be the official commander, and where dispatch work would be done by the organization known as the Traffic Regulation Commission. Detailed rules for the operation of this organization will be published in General Orders.

The M. T. C. blank forms shown below should be studied in connection with the subject-matter of this chapter.

TYPE FORM No. 1.

Dispatcher's Daily Blotter.

....., 191.....

Order No.	How Rec'd	Rec'd By	Time Rec'd	Order Auth. By	Filled by Co.	No. of Trucks	Description of Order	Date of Advance Order

.....
Dispatcher.

TYPE FORM No. 2.

....., ..., 191.....
(Place) (Date)

No.....

To Motor Truck Co. No.....

Send trucks to report as specified below:

No. of trucks.....
To whom to report.....
Place .....
Hour .....
Remarks .....

By direction:

.....
Dispatcher.

Received above order:

.....
(Asst.) Truckmaster Co.....

Hour.....

.....

(Perforated)

MOTOR TRUCK CO.....

Truck No..... Hour of departure.....
Driver's..... Hour of return.....

Signature of man in charge of truck.

.....

Trucks reported to me as directed above.

Time.....

Signature.....

DISPATCHER'S CARD

Organization .....Date....., 19.....
Report to.....
Address .....
Time.....
Destination .....
Motor Vehicle No..... Time out.....
Driver .....

The following extract from G. O. 19, Jan. 31, 1918, is cited for the information and guidance of all concerned.

Par. 1 (b)—The use of motor transportation for other than military purposes is strictly forbidden.

By command of General Pershing:
James G. Harbord,
Brigadier General.

I certify that this vehicle was used only for military purposes.

Date....., 191.....

Name .....
Rank .....
Form M. T. C. 162.

(Reverse side of Dispatcher's Card)

Instructions for a Driver

On dismissal, this card is to be delivered to senior officer in vehicle for signature and return to your C. O.

No. of Passengers.....
Miles .....
Gasoline .....
Oil .....

Remarks:

(Any unusual incidents of trip to be reported here.)

.....
.....
.....
.....
.....
.....
.....
.....
.....

DAILY RECORD OF OPERATION OF MOTOR VEHICLES.

Motor Truck Co..... (Date)....., 191.....

Truck No.	Driver	Time In	Order Rec'd	Destination	Time In	Time Out	Remarks	Truck Report

Form M. T. C. 172.

(Size of blank 13 x 14.)

INFLUENCE OF UPKEEP NECESSITIES ON THE OPERATION OF MOTOR TRANSPORT

461. The mission of motor transport is to do transportation work. The operation of transport units is therefore the controlling factor. The upkeep and repair agencies must keep the vehicles serviceable no matter under what conditions the vehicles may be required to operate. In other words, operating necessities outweigh maintenance requirements.

462. This statement is correct in theory, but in practice maintenance requirements have a very great effect both on operating efficiency and operating possibilities. It goes without saying that the operating personnel should be thoroughly trained in the proper mechanical and technical operation of the equipment. But no matter how well constructed a piece of mechanism may be, no matter how carefully handled, it is bound to break down or wear out and need repair. Therefore, there will always be need for maintenance facilities.

463. The maintenance operations may be roughly divided into supply, repair and salvage. Supply includes the furnishing of all spare parts and other materials needed to keep vehicles in serviceable condition. Repair includes the actual operations of performing the various mechanical work to restore the vehicles to a serviceable condition. Salvage includes the collection and remaking of damaged parts or material so that they can be put back into supply circulation, either in their original or in a modified form. The salvage operation is one of paramount importance in France, in view of the tonnage situation and the great scarcity of mechanical parts or materials for their manufacture.

464. The subject of maintenance will be here discussed solely in its bearing to questions of organization of transportation formations and to the general disposition of motor transport. The details of its technical operation will be found in appropriate chapters of this manual.

465. The necessity of figuring on the repair personnel is the first point that the maintenance requirements bring up. In addition to the few mechanics that should be included in each operating unit (about four per truck company of 80 men), the personnel intended exclusively for maintenance should be figured as one man to three trucks. In France the repair operations have been placed in three echelons, the mobile echelon with the division, capable of light repairs; the overhaul shop at the rate of one per corps for heavier work, and the reconstruction shop for the army, where all salvaging, production and heavy repair of broken parts is done. This, in addition to certain vehicle assembly parks at the ports, has led to an estimate of one maintenance man to every 2.6 motor vehicles in the A. E. F.

466. This is a careful estimate based on theory, practice and all available information. It may be stated, however, that, generally speaking, the number of maintenance men required varies inversely with the efficiency of the operating men. But whenever the number of motor vehicles is increased, the maintenance personnel must be increased proportionately. Therefore, a decision to equip units with motor transport necessitates the provision of a corresponding repair personnel and equipment.

467. The supply problem of spare parts and material, like other such problems, consists of the phases of procurement, storage and distribution. The peculiar nature of the articles forming this supply imposes certain limitations in each one of these phases. The necessity of utilizing a trained technical personnel is the most apparent, but in this respect the difference between the motor transport supply and other types of supply is merely one of degree. The essential and practical difference, which makes this supply question have such bearing on the operating work, will be seen by the following.

468. Spare parts and materials for use solely with motor vehicles may be grouped into two classes: first, those articles common to all motor vehicles, irrespective of make and type, and second, the special articles for each type, make and model of vehicle. Eliminating all articles that may be used for other than motor vehicles and which would, therefore, be carried in general supply depots, the list

of this first class consists of about 2,000 items. The average number of items in each of the special catalogs for each make, type and model of vehicle amounts to 1,500.

469. Therefore, a stock for one vehicle, without any duplication of pieces, would amount to 2,000 items, plus 1,500 items, or a total of 3,500 items. Now add a vehicle of different make, and the stock would be 4,000 plus 1,500 plus 1,500, or a total of 7,000. The number of articles has been doubled in volume, but instead of 3,500 different kinds of articles, we now have 5,000 different kinds. It is true that many of these items differ so little even in appearance that the only way to distinguish them is to actually fit them to the mechanism, but the difference is great enough to make them of no use except for the particular vehicle for which intended.

470. The bearings of this on the operating work may be readily seen. Each different make or model of passenger car or cargo truck assigned to a unit increases the complexity and volume of the spare parts that must be carried for that unit. As far as the carrying capacity is concerned, a given number of three-ton trucks of one make is equivalent to a like number of three-ton trucks of divers makes. But from a practical standpoint as to their being kept in a serviceable condition, it is seen that there is vast difference.

471. The only way to avoid this complexity of parts is to restrict to the greatest extent the variety of types, makes and models of vehicles in a given unit. Special vehicles should be looked upon as luxuries, and should not be allowed if a standard type would answer the purpose. Motor cars and trucks should be "districted" by make and model, either in divisions or in territorial districts. Much greater efficiency in practice will thus be obtained both in the repair and replacement features.

472. With our forces, however, urgent necessity has hitherto prevented the proper standardization of vehicles in the various units, and the establishment of a spare parts depot is far from a simple affair. The order to establish a spare parts depot may be issued as easily as one to establish a ration dump, but the carrying out of these two orders is by no means accomplished with the same ease and dispatch.

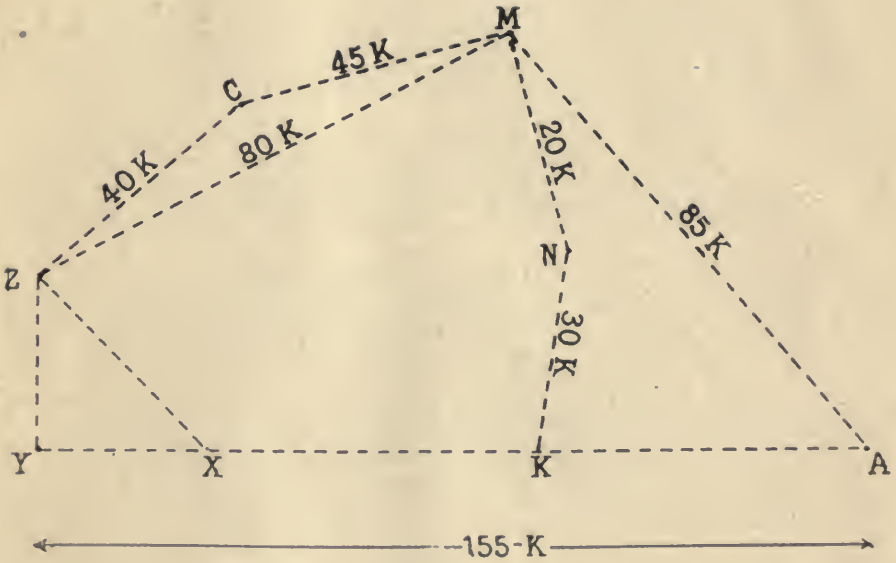
473. An element that necessitates the limiting of these depots to the fewest number possible is the scarcity of spare parts. The shortage which, from various causes exists even with the manufacturers at home, is greatly accentuated in France by the exigencies of the tonnage situation. Therefore, the meagre stock of these articles must be kept in as few places as possible, so that it may be distributed to the greatest advantage.

474. The close interrelation between the operation and maintenance functions of motor transport must be appreciated. The best efforts of a carefully trained and experienced operating personnel to keep vehicles rolling will be nullified if the maintenance agencies are either inadequate or inefficient. On the other hand, an operating personnel, untrained, undisciplined and inefficient will break up motor transport faster than it can be repaired by the most efficient and extensive maintenance organization or establishments. It is easier to find or train operation personnel than repair personnel. Standard methods of instruction, proper and efficient supervision will assure good operation. The proper training of repair men is a long process, and personnel for the greater part of the maintenance functions must be obtained, during the period of this war, from the various automobile or mechanical trades. Nowhere is the saying truer than in motor transport that "an ounce of prevention is worth a pound of cure." Trouble prevention that discovers a cause in time and provides a remedy is the secret of efficient maintenance. This requires close contact and co-operation between the operating and repair personnel.

CONVOY PROBLEM

The following problem, with remarks on its solution, is given as a practical example of conditions to be found and situations to be met in the transport service at the front.

475. The Commander of the.....Motor Transport Company at M (see sketch on following page), attached to the.....th Army Corps, and operating three-ton trucks, is given the tranport order shown on M. T. C. Form 116 attached, at 10 P. M., May 15th.


M
C
45 K
40 K
80 K
20 K
85 K
Z
N
30 K
Y
X
K
A
155-K

SOLUTION OF PROBLEM

476. Upon receiving this order the company commander must first consider just what the status of his company is, i. e., how much gasoline and oil he has; how many of his trucks are under repair; he status of his personnel, and his supply of rations. He must then study his map with a view of prescribing the itinerary to be followed, and calculate distances between points, so as to be able to determine his hours of departure, his speed loading and unloading, and must direct that the men take all of their personal equipment. Supposing that one of his cargo trucks is in the repair shop, he will calculate that, at a rate of 20 men per truck, he will have but one empty truck. He will direct that this and other such matters as are outlined below. He must then calculate thedistance he can go on the amount of gasoline and oil he has on hand and where he must replenish his supply.

477. The company commander must then issue definite, written orders to his non-commissioned officers, prescribing that the convoy shall leave at 6 A. M. (this being the hour of departure he decides upon as necessary in order to arrive at the loading point on time) and showing the itinerary to be followed and the times and places of loading and unloading, and must direct that the men take all of their personal equipment. Supposing that one of his cargo trucks is in the repair shop, he will calculate that, at a rate of 20 men per truck, he will have but one empty truck. He will direct that this truck be placed in the rear of the convoy, just in front of the file-closer's truck.

478. Supposing that the amount of gasoline and oil in the cargo trucks and in one of the two tank trucks will safely carry the convoy to the point "K" via "A," but not to the unloading points; he will direct that at 8 A. M. the other tank truck shall proceed to "N," fill up, and join the convoy at the point "K," where the convoy will be halted to replenish with gasoline and oil, to rest the men and to provide the men with their supper on the evening of May 16. Eight A. M. is set as a convenient hour of departure for the tank truck, which will allow the men to assist in breaking camp and to arrive at point "K" on time.

479. The company commander will direct the cooks to prepare breakfast for all the men at 5 A. M. May 16, to furnish all men with the necessary rations for one meal to be taken by them in their trucks, and to attach the kitchen trailmobile, with all equipment, to the gasoline supply truck going at 8 A. M. to "N." The cooks will furthermore be instructed to furnish the men with a hot meal at the point "K," with hot coffee after final unloading just beyond "Z" and with breakfast on the morning of May 17th.

480. The company commander will direct his lieutenant to remain behind with the motorcycle sidecar, a responsible non-commissioned officer and sufficient personnel to break camp. As soon as possible after the departure of the gasoline supply truck and the kitchen trailmobile at 8 A. M., the lieutenant will proceed with all the remaining camp equipment (loaded in company supply truck) to the town of "C," where he will make all necessary arrangements with the commander of the 15th Supply Train for the establishment of a permanent camp. The driver and assistant driver of the disabled truck will be directed to proceed to "C" as soon as their truck is repaired.

481. On the road the company commander will act as prescribed in the chapter on "Regulations for Standard Motor Vehicle Operation."

482. The commander will be at the loading and unloading point well in advance of his convoy, in order to make all necessary arrangements, and will designate a point just above "Z" on the road to "C," where the first section of his convoy which unloads at "Z" will wait for the second section, which unloads at "Y," and hot coffee will be served. On the route "M to Z" to "X" the convoy will be run as a single unit.

483. En route the commander will pay particular attention to maintaining the unity and the necessary speed of his convoy, and look to the comfort of his men.

484. On his arrival at the new camp at "C" he must immediately pay particular attention to two important duties: 1st, to put his company in readiness to take the road again; 2nd, to rest his men.

AMERICAN EXP

MOTOR TRA

Order No.....53..... Date.....May 15, 1918.... **MOTOR TRA**

FROM.....Capt. James Smith.....
(Officer issuing orders)
14th Supply Train

You will furnish Mot

Number of Vehicles	Report for Loading—			To Transport
	To (Place)	At (Time)	To (Officer)	
26	A	1 P. M.	Major Blank	500 men and bagga

Total No. of Vehicles 26

Order Received at (Place) M.....

(Time) ....10 P. M.....

(Date) ....May 15, 1918.....

Signed ....G. Brown.....

Rank ....1st Lt. M. T. C.....

M. T. C. Form 116—S. O. S.—Hdq. Printing Office.

ARY FORCES
T CORPS

ORT ORDER Date of Execution of Order.....May 16, 1918.....

TO.....1st Lt. G. Brown.....
(Officer who will execute order)

sportation as follows:

ns	Report for Unloading			Route and Remarks
	To (Place)	At (Time)	To (Officer)	
	Y and Z (See remarks)	6 A. M. May 17		Route to load M—A Route to unload A—Y except that vehicles for Z will use X—Z to unloading point. All vehicles via Y—Z—C to new permanent camp at C, which will be established under Capt. Doe, 15th Supply Train. Gasoline and oil can be obtained at N. Major Blank at A will advise destination of troops for Y and Z.

Signed.....Jas. Smith.....
(By officer issuing order)

Rank.....Capt. M. T. C.....

A—This form is filled out by an officer or other person who directs the movement of companies, sections, or individual trucks. The order is made out in a single copy, and when delivered to the officer, or other person who is to carry out the order, it is required that the officer or other person who receives said order shall enter place, time and date of receipt of the order and sign said statement. The order will then be given to the officer or other person who is to carry out the order. After the order has been carried out, and the date entered, as to truck numbers, tonnage, etc., it will be signed by the officer or enlisted man who has carried out the order and returned to the officer or other person who issued same.

B—The space below is to be filled out by commanders of companies, sections and by individual truck drivers after they have carried out this order.

Individual Truck Nos.	Individual Truck Tonnage	Estimated Mileage		Hour of Return	Individual Truck Nos.	Individual Truck Tonnage	Estimated Mileage		Hour of Return
		Loaded	Empty				Loaded	Empty	

C—State below any changes that were made in this order with regard to cargo, loading or unloading places, route or time and by whose authority.

D—Give below a report of general conditions during the day, making special mention of any accidents, delays, vehicles repaired on the roads, conditions at loading and unloading places, and any suggestions that will make for the betterment of the service.

Signed.....G. Brown (Signed).....

Rank .....1st Lieut., M. T. C.,.....
(Officer or enlisted man who carries out order)

CHAPTER XIV.

PROPERTY ACCOUNTING SYSTEM OF THE M. T. C., A. E. F.

The following extract from "Regulations Governing the Accounting for Property of the Motor Transport Corps of the A. E. F." is quoted for the information and guidance of all concerned:

* * * * * * *

485. "In order that the accounting for the property of the Motor Transport Corps may be simplified as much as possible, and the burden of the clerical work reduced to the lowest limit, the following general instructions in connection therewith are published for the information and guidance of all concerned:

486. There will be one accountable officer at Office of Director Motor Transport Corps, who will maintain a property account which will cover all property of the Motor Transport Corps wherever situated. All units and officers in whose possession motor transport property comes will be responsible for its preservation and care in accordance with general orders and Army Regulations. Upon receipt of this order all *motor transport property* now *being accounted* for by other officers will be invoiced to "The Property Officer," Office of Director, Motor Transport Corps, such invoices to be accompanied by properly completed M. T. C. Form 101, signed by the responsible officer, covering all items invoiced. In all units, organizations, parks, posts, etc., where an officer of the Motor Transport Corps is on duty this officer, or one of his commissioned assistants, to be designated by him, will be the responsible officer for motor transport property within the meaning of this order, and all transactions will be conducted in his name. Responsible officers, after having been so designated, must make proper transfers of the property for which they are responsible, upon relief from such duty, in order to clear themselves.

487. In accordance with authority contained in a cablegram from the Secretary of War, dated June 30, 1918, accountability for property shipped overseas from the United States ceases when same is turned over to the Embarkation Service. In view of this fact, any invoices received for property shipped from the United States will be returned to the invoicing officer for cancellation.

488. All property, with the procurement of which the Motor Transport Corps is charged, as per G. O. No. 74, G. H. Q., May 11, 1918, will be immediately taken up upon M. T. C. Form 101 by the Motor Transport Officer into whose hands it comes in the manner indicated by Paragraph 493 following and in accordance with instructions contained on the form.

489. All property, with the procurement of which the Motor Transport Corps is charged, as per G. O. No. 74, G. H. Q., May 11, 1918, will, when transferred, be covered by M. T. C. Form 101, as indicated in Paragraph 493 following in accordance with instructions contained on the form. Where such property is shipped by means of a convoy or in charge of a courier or other authorized agent, proper transfer papers will be prepared and turned over to this agent prior to his departure. The property in his charge then becomes his responsibility, and it is his duty to make delivery thereof and to secure receipts therefor, and immediately forward them to the issuing officer.

490. All motor transport property expended will be dropped on form as indicated in Paragraph 493 following.

491. On the property account of the Property Officer at Office of Director Motor Transport Corps, vehicles, accessories and parts will be carried in types and numbers only; machine tools and other permanent or semi-permanent installations will be dropped as "permanent installations"; hand tools will be carried under that heading without reference to kind, and materials will be expended as soon as used. The value of this system and its economical working depends en-

tirely on Motor Transport Officers. They are personally responsible for Government property in their constructive or actual possession, and will exercise the closest scrutiny at all times of all such property to see that it is properly applied and used. They will be held responsible until relieved by transfer, the findings of a surveying officer or actual application in repairs, construction, etc.

492. Responsible officers are not required to maintain lists of property for which they are responsible, but are urged to do so for their own protection. Accounts against such responsible officer will be maintained at office of Director Motor Transport Corps, and periodical inspections and inventories will be made of the property in the possession of such officers, by officers detailed for that purpose, at which inspections the value of the property not on hand will be charged against the responsible officer unless satisfactory explanation is made.

493. Form 101, covering property transferred, received for the United States or by purchase, requisition or capture, will be transmitted to the Office of Director, Motor Transport Corps, as soon as completed. Forms covering expenditures will be transmitted periodically at the end of each week. They may be submitted more frequently if desired, but not less frequently.

494. Invoices from other staff departments covering property turned in to Motor Transport Officers will not be accomplished, but will be transmitted to Office of Director, Motor Transport Corps, accompanied by properly completed and certified Forms 101 from the responsible officer.

495. Property lost in action will be dropped as a charge against the responsible officer after he has furnished the Property Officer, Office of Director, Motor Transport Corps, with a certificate in duplicate enumerating the property lost, such certificate to be approved by the commanding officer of the organization involved.

496. Form 101 will be accomplished in all cases where a vehicle is turned over to an Overhaul Park for overhaul, and reaccomplished upon the completion of the overhauling.

497. Form 101 will be accomplished between the transferring organization and the reconstructive park at Verneuil when a vehicle is sent to this park. After receipt of the vehicle at the reconstruction park, if the vehicle is completely disassembled and the parts salvaged, Form 101 will again be accomplished in all cases to indicate the expenditure of property, as provided in Paragraph 490 as above. Upon receipt of this form indicating expenditure, the vehicle will be dropped from the records at Office of Director, Motor Transport Corps.

498. All vehicles reconstructed at the Reconstruction Park at Verneuil will, upon completion of reconstruction, be given the same number as that under which they were formerly carried on the registration records. Newly constructed vehicles will be taken up on Form 101, as provided in Paragraph 493 above. They will be given registration numbers and will be assigned in accordance with instructions laid down from time to time by Director Motor Transport Corps."

* * * * * * *

The following additional instructions are given for the assistance and guidance of all officers responsible for Motor Transport Corps property.

499. As provided in Paragraph 486 of the above extract, there will be one accountable officer for M. T. C. property, and he will be stationed at the office of the D. M. T. C., and all Motor Transport property as defined in G. O. 74, G. H. Q., c. s., A. E. F., now being accounted for by other officers either in the M. T. C. or any other Corps or Arm of the Service, should be invoiced to "The Property Officer, O. D. M. T. C." These invoices should cover only Motor Transport Property, as same will not be accomplished if they include items of Q. M. or other property, except that of the Motor Transport Corps. These invoices, when accomplished and returned to the Issuing Officer, will serve as vouchers to his property account, and will relieve him of accountability for Motor Transport property. In addition to the above mentioned invoices, the Invoicing Officer must transmit to the Property Officer, O. D. M. T. C., Memorandum Receipt, M. T. C. Form 101, covering all property so invoiced, and corresponding to such invoices, the receipts on M. T. C. Form 101 to be accomplished by the officer responsible for the prop-

erty covered by the invoice at the time the invoice is forwarded. Care must be taken in the preparation of said invoices and Forms 101 that ONLY MOTOR TRANSPORT PROPERTY is covered by same, and that they *check absolutely*, to avoid the necessity of returning the papers for correction. All Motor Transport property as defined above which is not being *accounted* for as stated above will be taken up on M. T. C. Form 101 by the responsible officer, said form to be forwarded to the O. D. M. T. C., as provided in Paragraph 493 of the above extract, but without corresponding invoices.

500. Where motor transport property is received in the American Expeditionary Forces, either from the United States or by purchase in France or England, or by requisition or capture, or from any other source, the same will be taken up on Memorandum Receipt, M. T. C. Form 101, by the Motor Transport Officer into whose hands the said property comes, as provided in Paragraphs 487 and 493 of the above extract. Immediately upon receipt of property, as above stated, the Motor Transport Officer should accomplish the Memorandum Receipt and forward same immediately to the D. M. T. C.

501. Paragraph 490 of the above extract provides that Motor Transport property expended will be dropped on Form 101. When expenditures are made they are shown on Form 101 as expended in the blank near the top of the form provided for same. In the column for "Remarks" on said form should be shown the method of expending same, as: "Expended for Repair of Trucks." Forms covering expenditures will be transmitted periodically at the end of each week to the D. M. T. C.

502. When property is lost in action the same will be dropped as a charge against the responsible officer upon receipt of certificate, as provided in Paragraph 495 of the above extract, which is self-explanatory.

503. The property account of the property officer, D. M. T. C., will be kept in the following manner: There will be kept a general account by numbers and types, showing the total number of motor vehicles and the total number of supplies, accessories and tools. There will also be kept a separate account against each officer responsible for Motor Transport Corps property. This account is made up and supported by the memorandum receipts, M. T. C. Form 101, to be forwarded to this office as prescribed in the above extract.

504. Paragraph 492, above extract, provides that responsible officers are not required to maintain lists of property, but are urged to do so for their own protection. It has been learned that some officers in the American Expeditionary Forces have conceived the idea that, in view of the fact that they are not held accountable, i. e., they are not required to make returns of property, they are also relieved of responsibility. That is an error, and all officers will be held *strictly responsible* for all property charged against them on the property accounts of the property officer at the O. D. M. T. C., and the only way to be relieved of said responsibility is by transfer, expenditure or survey, as provided in the above extract. The general account as maintained by the property officer, O. D. M. T. C., will be kept on M. T. C. Form 184. These cards will be printed in quantities sufficient to make same available for the use of responsible officers, who may obtain same upon requisition, and it is suggested that same be used by responsible officers in maintaining lists of property for which they are responsible.

505. It cannot be too strongly emphasized that *all* Motor Transport property must appear on Form 101 charged against the officer in whose possession it is, and that until action has been taken as hereinbefore indicated such charge will stand on the records of this office against the officers concerned. It is, therefore, essential that documents covering all property transactions be forwarded to this office immediately. Further, that the inspections indicated as to be made from time to time by representatives of this office should not develop property in the possession of officers which has not been reported on Form 101, nor charges on the records of this office for which the property cannot be produced.

506. Motor Transport Corps Form 101, together with inserts 101-A and 101-B, will be used in all cases for the transfer of M. T. C. property, and should be accomplished at the time the transfer is made and immediately forwarded to the O. D. M. T. C. This includes cases where vehicles are turned over for repair, as provided in Paragraph 496 of the above extract.

Note.—An explanation of the forms used will be found in Chapter XV.

CHAPTER XV.

MISCELLANEOUS

507. The following General Orders, Bulletins, Circulars, Memoranda, etc., contain matter pertinent to the Motor Transport Corps:

WAR DEPARTMENT

General Orders: 1918—Nos. 38, 75.

GENERAL HEADQUARTERS, AMERICAN EXPEDITIONARY FORCES.

General Orders: 1917—Nos. 29, 40, 60, 63, 71.
General Orders: 1918—Nos. 2, 11, 19, 20, 23, 29, 21, 31, 42, 43, 44, 48, 50, 52, 58, 66, 70, 71, 72, 74, 80, 82, 89, 111, 114.
Memoranda: 1917—No. 4, Oct. 2, 1917.
Bulletin: 1918—No. 22.

OFFICE HEADQUARTERS COMMANDANT, G. H. Q.

General Order: 1918—No. 2.
Post Memo.: 1918—No. 17.

OFFICE DEPUTY CHIEF OF STAFF, G. H. Q.

Memoranda: Notification Serial No. 6.

HEADQUARTERS, SERVICES OF SUPPLY

General Orders: 1918—Nos. 1, 15, 22, 19, 23.
Bulletin: 1918—No. 1.
Statement: 1918—May 20th of G-1.

HEADQUARTERS, LINES OF COMMUNICATION

General Orders: 1917—No. 14.
General Orders: 1918—Nos, 13, 17.
Memoranda: 1917—Nos. 14, 17, 30, 40, 50, 54, 67.
Bulletin: 1918—No. 10.

OFFICE OF CHIEF QUARTERMASTER

Office Order: 1917—No. 2.

OFFICE OF DIRECTOR, MOTOR TRANSPORT CORPS

Bulletins: 1918—All.
Circulars: 1918—All.
Memoranda: 1918—All.
Notes on Motor Transportation (Manual).

HEADQUARTERS, SERVICE OF UTILITIES

Circular: 1918—No. 9.

TRANSPORTATION DEPARTMENT

General Notice: 1918—No. 11.

INSTRUCTIONS RELATIVE TO THE CLASSIFICATION, MARKING AND NUMBERING OF MOTOR VEHICLES

508. *SYSTEM OF CLASSIFICATION.*

(a) All motor vehicles will be classified according to type in the following manner:

Passenger cars (regardless of size and type of body)	Type 1
Light delivery trucks (1-ton or less capacity)	Type 2
Trucks (1½ and 2-ton capacity)	Type 3
Trucks (3 and 4-ton capacity)	Type 4
Trucks (5-ton capacity or more)	Type 5
Motorcycles (with or without sidecars)	Type 6
Motor ambulances (all types)	Type 7
Tractors (excepting caterpillars)	Type 8
Caterpillar tractors	Type 9
Trailers (all types, excepting kitchen trailmobiles and machine shop)	Type 0
Machine shop trucks (all types)	Type 00
Kitchen trailer auto	Type 10
Special Engineer vehicles	Type 20
Balloon winch trucks	Type 30
Reconnaissance cars	Type 40
Disinfectors and fire engines	Type 50
Laboratory trucks (all types)	Type 60
Machine shop trailers	Type 70
Tank trucks	Type 80
Special Ordnance Vehicles	Type 90

Further types will be established from time to time as required in bulletins from the office of the Director, Motor Transport Corps.

(b) Privately owned motor vehicles which are authorized to procure gasoline, oil and repairs from Government sources will be assigned numbers in accordance with the foregoing classification with the addition of the letter "X" to such number to indicate the privately owned character of the vehicle.

509. *SYSTEM OF MARKING.*

(a) All motor vehicles will be painted an olive drab color with paint mixed as indicated in paragraph 3964, manual for the Quartermaster Corps, 1917. All letters and numbers of an identifying character placed on motor vehicles shall be shown in white paint.

(b) The identifying numbers will be placed on both sides and on the rear of each motor vehicle, the symbols composing such numbers to be four inches in height and the complete number to be invariably preceded by the letters U. S. and, in the cases of private ownership, followed by the letter X. On trucks and ambulances the side numbers will be placed on the hood, on passenger cars on the rear doors. On trucks the rear number will be shown on the right two-thirds or two panels of the tailgate and on other vehicles in the center of the rear.

(c) The identifying numbers on trailers will be placed on both sides and in the center of the rear of the body in symbols not less than two inches in height.

(d) The identifying numbers for motorcycles to which sidecars are attached on the right side will be placed on the left side of the gasoline tank of the motorcycle and on the right side, front and rear of the sidecar; where the sidecar is attached to left side of the motorcycle the number will be shown on the right side of the gasoline tank and on the left side, front and rear of the sidecar. Symbols on motorcycles and sidecars will not be less than two inches in height. Sidecars are not given identifying numbers as such, but take the number of the motorcycle to which attached.

(e) The identifying numbers for motorcycles without sidecars will be shown on both sides of the gasoline tank and on a plate firmly attached to the rear mudguard, in symbols not less than two inches in height.

(f) On trucks, passenger vehicles and motor ambulances assigned to ammunition, engineer, supply and sanitary trains the identifying insigna will be shown on both sides of bodies of vehicles, and in the case of trucks on the left one-third or panel of the tailgate.

510. *SYSTEM OF NUMBERING.*—The first numeral of an identifying number on a motor vehicle will indicate the type of such vehicle. This numeral, together with those making up the complete number, gives the A. E. F. registration number of the vehicle. Thus, the 685th passenger car placed in service would be type 1-685 or U. S. 1685. Further examples are as follows:

Vehicle No. 1, passenger car	U. S. 11
Vehicle No. 1, light delivery truck	U. S. 21
Vehicle No. 1, 1½ ton truck	U. S. 31
Vehicle No. 1, kitchen trailer	U. S. 101
Vehicle No. 5, privately owned passenger car	U. S. 15X
Vehicle No. 6, privately owned 1½ ton truck	U. S. 36X
Vehicle No. 1, privately owned kitchen trailer	U. S. 101X

511. *ADDITIONAL MARKING.*—

(a) In order that the identifying number of each motor vehicle may be indelibly shown thereon, such number, as soon as ascertained, will be stamped with steel dies in the righthand longitudinal member of the frame of the chassis, together with the serial number of each vehicle. These numbers will be not less than one-half inch in height. Stenciling or painting numbers on the frames of chassis will be eliminated.

(b) Where vehicles have but one number, and that the motor number, such as Ford cars, such motor number will be considered the serial number within the meaning of the foregoing paragraph.

(c) The provisions of the foregoing Par. 511 (a) will not apply to motorcycles and sidecars by reason of the fact that parts for those vehicles are readily interchangeable.

(d) An identifying number, once assigned to a motor vehicle, remains with that vehicle during its life, notwithstanding the fact that the motor or other parts may be changed. When a vehicle loses its identity through capture, salvage, conversion or other causes, the number so vacated will not be reassigned to any other vehicle.

(e) Motor truck covers will invariably be marked with the same identifying numbers as the trucks to which they belong. Such numbers will be on the covers in such a manner as to make them visible on either side when the cover is placed and the symbols will be in contrasting color, four inches in height.

512. *SYSTEM OF ASSIGNING NUMBERS.*

(a) Reception Parks and other Motor Transport units or representatives authorized to register motor vehicles will have allotted to them Registration Numbers from the Office of the Director, Motor Transport Corps, from time to time, as required. Immediately upon the assignment to a vehicle of one of these numbers the officer making it will *immediately* forward the required data to the Director, Motor Transport Corps, marking it "Urgent Official Mail."

(b) Where it is impracticable to properly mark the vehicle at the point of receipt, due to its being boxed or crated and issue being made in that condition, M. T. C. Form 122 will be properly completed and attached thereto. When the vehicle is unpacked, the officer who receives it is charged with the duty of properly marking it.

(c) In the case of motor vehicles received through other sources than Reception Parks, i. e., by purchase, capture, etc., the officer into whose possession such vehicle first comes will advise the Director, Motor Transport Corps, of the make, capacity, type, motor and chassis numbers. The Director will then furnish the necessary identifying numbers and instructions.

513. *IDENTIFICATION INSIGNIA.*

(a) Trucks composing trains or smaller units of not less than twelve trucks will have stencilled or painted on both sides and the rear distinctive insignia, together with the serial number, of such truck within the company or other unit. The design must be of simple pattern, readily discernable at some distance, and must be black, but on a background of any color, which must be more than eighteen inches square. The same design and the same colored background will be used for all vehicles in a company or smaller unit, while the same design, but of different colored background, for each company will be used for the vehicles in a train. Motor ambulances and passenger cars will also bear such insignia, so far as body construction will permit.

(b) The organization number will be placed within the square containing the insignia in such a manner as not to create a tendency to confuse it with the registration number, and will indicate the vehicle's number within the organization. Thus, if an organization operate twenty-seven trucks or ambulances and one passenger vehicle, the trucks or ambulances will be numbered from one to twenty-seven consecutively, and the passenger vehicle twenty-eight.

(c) No insignia will be used or adopted for this purpose until after a design or description thereof shall have first been submitted to the Director, Motor Transport Corps, and his approval given. Approved designs will be registered in the Office of the Director to prevent duplication. In cases where organizations find it impracticable to cut their own stencils, requisitions therefor should be submitted to the Director, Motor Transport Corps.

(d) The provisions of the foregoing Paragraph 513 (a) are limited to the following organizations:

COMBAT DIVISION.

Division headquarters.
Train headquarters and Military Police.
Ammunition train.
Engineer train.
Sanitary train.
Mobile ordnance repair shop.

CORPS TROOPS.

Corps headquarters (including headquarters troop).
Military police company.
Corps artillery park (including M. O. R. S.).
Sanitary train.
Supply train.
Troop transportation trains.
Engineer regiment and engineer train.

ARMY TROOPS.

Army headquarters (less army artillery headquarters).
Army artillery park.
Military police company.
Motor supply service (1 regiment headquarters and 6 companies—engineers).
Road service.
Truck companies.
Sanitary train.
Truck companies, army train.
Supply train.
Army reserve.

S. O. S.

Motor truck trains.
Motor truck companies.
Motor car companies.

In addition to the foregoing, various organizations operating in the Services of Supplies, such as groups, schools and training centers, may, upon application to the Director, Motor Transport Corps, be assigned identification insignia where circumstances warrant such action.

(e) Motorcycles, rolling kitchens, trailers and vehicles belonging to combat trains of organizations will not be marked with identification insignia.

THESE FORMS DO NOT
SUPERSEDE U. S. FORMS.

SYNOPSIS OF M. T. C. FORMS SHOWING THEIR PURPOSE AND USE

Form No. 101. *Property Voucher.*—To be prepared in quadruplicate, except as noted in instructions on Form. This Form will be used in each and every transfer of Motor Transport Corps property from one organization to another, or from an organization to a person, etc., and for the taking up and expenditure of such property. When properly made out it will give a complete record of every transaction in property, a complete description of the property, and the name and rank of Transferring, Receiving or other interested officer.

Form No. 101A. To be used as a supplementary to Form 101 when space on Form 101 is not sufficient to permit listing of all transferred items. To be attached to Form 101B to indicate equipment on each vehicle transferred.

Form No. 101B. To be used in place of Form No. 101 when two or more vehicles of like type are to be transferred. Form No. 101A will be attached to indicate equipment on each vehicle.

Form No. 103. *Receiving Memorandum.*—A duplicate form to be used by all M. T. C. Supply Depots, indicating receipt of goods.

Form No. 104. *Spare Parts Stock Card.*—To be used by M. T. C. Supply Depots to indicate number of parts of a particular piece on hand at any time. This card is provided with space for entries of receipts and shipments, and will constitute the only bill record to be kept by Suppy Depot. Its accuracy will be checked by actual inventory. The use of the double card system formerly used by some Depots is herewith eliminated.

Form No. 106. *Re-Order Form for M. T. C. Material.*—This form will be used by Supply Depots as a means of informing requisitioning activities that orders for parts which have been received are not fully understood, and will be further used as a request for additional information. Space for reply is provided on the same sheet.

Form No. 108. *Spare Parts Back Orders.*—Used by M. T. C. Supply Depots. One of these cards is kept for each part and upon each card will be kept a record of back orders on file.

Form No. 110. *Enlisted Personnel Report Card.*—This card is for filing of personnel Branch, O. D. M. T. C., and contains an individual record of all enlisted personnel. It will be used by all M. T. C. activities in making reports of enlisted personnel.

Forms Nos. 112 and 112A. *Work Orders.*—These forms are to be used together at all times and constitute a work order.

Form No. 112 is sent with the work order or job ticket; Form No. 112 accompanies the material to be repaired and remains with it until work is completed. Inspector's O. K.'s will be written on this form. Upon completion of repair form will be sent to office and filed with its complementary Form No. 112A.

Form No. 112A remains in the office and on it are recorded all time records. Upon completion of job, it will be filed with its complementary Form 112.

Form 112 has attached to it a stub-receipt which is to be given driver delivering vehicle in cases where Form No. 101 is not required to be accomplished.

Form No. 113. *Work Order Time Card.*—To be used by Repair activities in keeping all hour records of repairs.

Form No. 114. *Order for Material.*—To be used by Repair activities in the requisition of material from local stockrooms; triplicate form.

Form No. 115. *Job List.*—A card to be used by Repair activities for listing of all jobs at present in the Shop; should be made out in duplicate in order that jobs may be cross-indexed by shop order numbers and by make.

Form No. 116. *Transportation Order.*—Operating Form: Used by M. T. C. officers and Dispatch officers in transmitting orders for transportation and hauling. To be made out in duplicate.

Form No. 117. *Consumption Record.*—Provides a Daily Record of the gas and oil used at each Station where such supplies are issued, and the vehicle and

organization to which issue is made. Form contains provision for carrying forward balance of the day previous and adding record of goods received. Form is for a perpetual inventory.

Form No. 118. *Weekly Vehicle Report.*—To be used by all M. T. C. activities to whom transportation is assigned. All such activities will make weekly reports of such transportation on this form and higher commands will use the same form for consolidating reports of various units in their command. This form provides for statement as to fuel consumption, mileage, etc.

Form No. 119. *Salvage Tags.*—These tags are to be attached to every non-expendible article returned for salvage to the Motor Reconstruction Park at Verneuil.

Form No. 122. *Registration Tag.*—Provides a means of completing the registration of vehicles shipped crated. In such cases the registration number of a machine is entered on the tag and the tag affixed to the vehicle inside the crate (usually registration card Form No. 139 is at the same time mailed to O. D. M. T. C.). The organization receiving the vehicle removes the tag and upon uncrating the vehicle stencils upon the machine the U. S. number as shown by the tag.

Form No. 123. *Personnel Status Card.*—For use by all M. T. C. organizations and activities. The card contains the status of commissioned and enlisted personnel of each organization, the dates of changes.

Form No. 124. *Driver's Accident Card.*—To be made out by the driver in each case of accident.

Form No. 125. *Officer's Accident Report.*—Provides for a summary of the result of Investigating Officer's inquiry into an accident.

Form No. 127. *Vehicle Repair Assignment.*—To be prepared in triplicate by division and section M. T. O.'s, one copy to be retained and the other copies to be sent C. O. of various repair activities within the jurisdiction of the M. T. O., for the purpose of informing said C. O.'s as to the makes and types of vehicles for which they will be required to carry spare parts. Third copy to be sent to O. D. M. T. C.

Form No. 131. *Officer's Personal Card.*—To be made out by each M. T. C. Officer and filed at O. D. M. T. C.

Form No. 132. *Daily Report of Unassigned Motor Vehicles.*—Used by Reception Parks, Reserve Parks and Overhaul Parks. Shows day by day vehicle situation at these parks, giving number ready for issue and number awaiting repairs and assembly.

Form No. 134. *Motor Vehicle Transfer Form.*—Used in Registration Dept. at O. D. M. T. C. Should also be used by M. T. C. officers of Divisions and S. O. S. District to notify Army and Section M. T. O.'s that transfer of vehicles has been made on Form No. 101.

Form No. 135. *Daily Report of Motor Vehicles.*—To be submitted by units specifically instructed to submit this report.

Form No. 136A. *Shipping Label.*—Large.

Form No. 136B. *Shipping Label.*—Small.

Form No. 138. *Due Date Card.*—For use by officers in order to have their correspondence brought up at a later, pre-determined date. Also used as a charge when correspondence is taken from files.

Form No. 139 (a, b and c). *Vehicle Registration Card.*—To be made out in duplicate by officers charged with the initial registration of vehicles.

139a White cards are to be used for trucks.

139b Yellow cards are to be used for passenger cars.

139c Red cards are to be used for motorcycles.

Form No. 142 (a, b and c). *Organization and Locating Cards.*—Used by Registration Dept., O. D. M. T. C. to furnish ready information regarding number, type, etc., of motor vehicles assigned to any unit or organization. It may be used by Division, District, Section and Army M. T. O.'s for the same purpose.

142a White cards are to be used for trucks.
142b Yellow cards are to be used for passenger cars.
142c Red cards are to be used for motorcycles.

Form No. 143. *M. T. C. Personnel Return.*—To be made out on the first day of each month by the C. O. of each Company, Train, Unit or Detachment. Also by all M. T. O. Officers for personnel on duty there. This form is similar in design and purpose to Form A. G. O. 30.

Form No. 144. *Repair Park Report.*—To be used by all Repair activities in the M. T. C. To be made out from data obtained from various local forms *provided for in this Bulletin.*

Service Parks will submit this Repair Form alone. Overhaul Parks and Reconstruction Parks will attach a work summary.

Form No. 144a *Synopsis of Labor Card.*—Gives a synopsis of the total work hours expended by the productive labor on duty at the Park.

Form No. 145. *Organization Ledger.*—Used only by Registration Dept., O. D. M. T. C., and is an organization ledger.

Form No. 146a, b and c. *Equipment List.*—Provides equipment list for various types of vehicles; to be used as a receipt for drivers operating vehicles.

Form No. 146a. To be used for trucks. (White.)

Form No. 146b. To be used for passenger cars. (Yellow.)

Form No. 146c. To be used for motorcycles. (Red.)

Form No. 149 (a, b and c). *Vehicle Log Book.*—To be kept in the machine at all times; gives the make, type and number of vehicle and provides for a record of all transfers, and the date, place and description of all repairs.

Form No. 149a (Blue).—Is used for trucks.

Form No. 149b (Yellow). Is used for passenger cars.

Form No. 149c (Pink).—Is used for motorcycles.

Form No. 150. *Vehicle Supply Card and Mileage Record.*—To be carried in the vehicle at all times, with the vehicle log book.

Provides for daily entries of gas, oil and grease consumption, with daily record of estimated mileage; data secured on this card will be used in making up Form No. 118.

Form No. 151. *Record of Scrap.*—This form is to be filled out by M. T. C. Reconstruction Park of all tires received to be scrapped.

Form No. 152a. *Repaired Tire Record.*—For use at Motor Transport Corps Reconstruction Park.

Form No. 152b. *Tire Repair Record.*—For use at M. T. C. Reconstruction Park.

Form No. 153. *Purchase Request.*—Letter used to request purchase of supplies and equipment which cannot be obtained from depots. May be used by any department; made out in octuplicate.

Form No. 154. *Action Statement.*—Used by Supply Depots as acknowledgment of requisition and notice of supplies shipped. Printed in quadruplicate. This form will not be used as a requisition.

Form No. 155. *Report of Status of Motor Vehicles in A. E. F.*—Used only by O. D. M. T. C.

Form No. 156. *Tonnage Report.*—Used only by O. D. M. T. C.

Form No. 157. *Report of A. E. F. Motor Vehicle Requirements and Receipts.*—Used only by O. D. M. T. C.

Form No. 158a. *Status of M. T. C. Personnel in A. E. F.*—Used only by O. D. M. T. C.

Form No. 158b. *Status of M. T. C. Personnel in Units of A. E. F.*—Used only by O. D. M. T. C.

Form No. 159. *M. T. C. Personnel Requirements and Receipts in A. E. F.*—Used only by O. D. M. T. C.

Form No. 160. *Requisition.*—M. T. C. will use Standard Quartermaster Requisition (Q. M. C. 160), which will be used to requisition all supplies.

This form may be secured from O. D. M. T. C., or from the nearest Quartermaster.

Form No. 161. *Receipts for Hire of Motor Transportation.*—Used by Allied Governments. This form will be used by M. T. O.'s when transportation is provided to or received from Allied Governments; the rate is given thereon.

Form No. 162. *Car Dispatcher's Record.*—To be used by M. T. C. Pool and other Operating Units to indicate actual particulars of assignment of individual cars.

Form No. 163. *Vehicle Debit and Credit Card.*—To be used by Division, Army, District and Section M. T. O.'s for listing vehicles under their jurisdiction; has space for record of transfers.

Form No. 164. *Summary of Motor Vehicles.*—Used by Division, Army, District and Section M. T. O.'s to provide a ready summary for all vehicles of like type.

Form No. 165. *Repair Park Record by Makes.*—This form is a Repair Park Log Book; one copy is kept in Repair Park for each type of vehicle repair and entries are made at the time of completion of repairs. This form should give at any time a complete record, by makes, of vehicles repaired.

Form No. 166. *Repair Park Record by Organizations.*—To be used by Repair Parks as a Log Book; one sheet to be kept for each organization for which the Repair Park performs any work. These sheets will give at any time a complete record of work performed for any organization.

Form No. 167. *Checking Report.*—To be used by M. T. C. Reconstruction Park and by Overhaul Parks to record records of parts received for repair.

Form No. 168.—*Record of Receipt and Distribution of Salvage Property.*—For use by M. T. C. Reconstruction Park.

Form No. 169.—*Receiving Sheet.*—For use in Reclaim Dept., M. T. C. Reconstruction Park.

Form No. 170. *Shop Travel Order.*—To be used by Overhaul Parks and M. T. C. Reconstruction Park as a means of tracing work through various departments when it is necessary for more than one department to work upon a work order. This form is used in connection with Form 112.

Form No. 171. *Reception Park Tag.*—Used by Reception Parks in connection with work forms provided herein, and will act as a check on these forms.

Form No. 172. *Daily Record of Operation of Motor Vehicles.*—For use by orzanizations to whom transportation is assigned in keeping daily record of all such transportation.

Form No. 173. *Dispatcher's Card for Passenger Vehicles.*—Required to be made out by dispatcher and given to division; contains explicit instructions as to whom to report for trip. To be signed by officer making trip.

Form No. 174. *Vehicle Inspection Report Form.*—A weekly record to be kept by commanders or organizations to whom transportation is assigned and which will furnish complete record of inspections. Copy of this form may be sent to Service Park as a forecast of parts to be needed in the future.

Form No. 175. *Motorcycle Inspection Report Form.*—A weekly record to be kept by commanders of organizations to whom motorcycle transportation is assigned, and which will furnish record of inspection. Copy of this form may be sent to Service Park as a forecast of parts to be needed in the future.

Form No. 176. *Individual Record Card.*—For use at M. T. C. Schools.

Form No. 177.—*Officer's Record of Instruction (Field Service).*—For use at M. T. C. Schools.

Form No. 178. *Officer's Record of Instruction (Park Service.)*—For use at M. T. C. Schools.

Form No. 179. *Enlisted Man's Record of Instruction (Field Service).*

Form No. 180. *Enlisted Man's Record of Instruction (Driver's Course).*

Form No. 181. *Enlisted Man's Record of Instruction (Park Service).*

This list is subject to additions and corrections from time to time as issued from Office Director Motor Transport Corps.

THESE FORMS DO NOT
SUPERSEDE U. S. FORMS.

THIS TABLE SHOWS ALL M. T. C. FORMS ACTIVITY

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METHOD OF ASSIGNING AND ISSUING MOTOR VEHICLES

GENERAL

516. This subject concerns more particularly the office of the D. M. T. C. and those M. T. officers whose responsibilities include the control and operation of reception and issuing parks, but it is described here briefly as a matter of information to all M. T. C. officers.

517. The issue of vehicles might be considered theoretically as a function of the Supply Division, but, for reasons of experience as well as theory, it has been found more advantageous to place it as one of the duties of the Operations Division.

518. The general responsibilities with respect to motor vehicles are therefore the following:

(a) *Supply Division.*—Places orders therefor, provides tonnage and delivers to Reception Parks.

(b) *Repair Division.*—Assembles new vehicles, or repairs unserviceable ones, makes them ready for issue (R. F. I.) and holds them at the disposition of the Operations Division.

(c) *Operations Division.*—Assigns all R. F. I. vehicles, and either operates them or supervises their operation according to provisions of G. O. 74, G. H. Q., A. E. F., 1918.

ASSIGNMENT OF VEHICLES

519. Motor vehicles are Class 4 supplies as enumerated in G. O. 44, G. H. Q., A. E. F., 1918. This class includes among other items all articles whose distribution must depend on contemplated operations or according to the relative needs of other units. The extreme shortage of motor transportation on hand to that authorized renders it imperative to issue it according to the necessities of each case, and not merely according to an allowance prescribed in a Table of Organization.

520. It is therefore necessary to indicate not only the priority in which various units or formations shall be equipped with motor transport, but also the specific amount of equipment to be assigned in each case. Decisions on these subjects are consequently a function of G. H. Q., who may either act in each case or lay down a general policy to be pursued.

521. The issue of transportation in bulk is made in truck tons, as it is the capacity that is ordinarily desired and not the actual number of vehicles. Thus an order for 15 truck tons may be filled by 10 ton and one-half trucks, 5 three-ton trucks or 3 five-ton trucks.

522. When a new division arrives in France, it is necessary to supply it immediately with a certain amount of motor equipment to take care of its immediate transportation needs. For this purpose there is a general authority to issue to each division on its arrival in its area an "initial standard equipment," consisting of:

110 truck tons.
10 automobiles.
15 motorcycles with sidecars.

523. Upon arrival of advance parties of a new division, G-4, S. O. S. informs the office D. M. T. C., and the requisite amount of transportation is set aside and delivered by M. T. C. personnel from an issue park to the divisional area, and this personnel remains with the equipment until relieved by the divisional personnel. Thereafter all further assignments of motor transportation to the division or other combat unit must be authorized by G. H. G.

524. Each Reception or Organization Park sends a daily telegraphic report to the office D. M. T. C., giving the number of vehicles ready for issue (R. F. I.) as well as a daily mail report showing not only R. F. I. vehicles, but all vehicles on

hand. These reports are consolidated and transmitted to G-4, G. H. Q., and G-4, S. O. S., and show the complete status of all undelivered motor transportation that has either been assigned or remains unassigned at the parks.

525. G-4, G. H. Q., then issues to the D. M. T. C. (through G4, S. O. S.) a weekly assignment sheet, showing priority in which vehicles are to be assigned. Upon receipt of these sheets the assignments are made from the various issue parks where the particular vehicles may be available, telegraphic orders are issued to the parks and the units to which transportation may be assigned are notified by wire, and if delivery is not to be made by M. T. C. personnel, they are requested to send personnel to the park to take delivery. The assignment sheets are so filed that they will come up automatically for attention within ten days, so that any delay may be ascertained and action taken to expedite delivery.

526. Before transportation leaves an issue park it is formed into a convoy, given a convoy number and placed in charge of a M. T. C. pilot. A telegraphic report is made to the D. M. T. C. giving the convoy number, and a detailed report of the number, make and type of vehicles constituting the convoy, cargo carried, destination of cargo and of the convoy (in case cargo is dropped en route) and the telegraphic order from the office of D. M. T. C. forming the convoy. Each night the pilot wires the location and condition of the convoy to the office D. M. T. C. This enables a check to be kept on all vehicles in transit, allows vehicles to be diverted from the original destinations or any necessary instructions to be given in reference to the cargo. Upon arrival at destination the pilot makes a final telegraphic report when vehicles have been delivered to consignee, when the office D. M. T. C. ceases to assume direct responsibility for these vehicles.

527. Assignments of vehicles to the S. O. S. are made in block, and endeavor is made to allot this equipment to the best possible advantage. In order to arrive at this, periodical reports as to transportation needs in each section of the S. O. S. are made by the M. T. O. thereof and forwarded through the Commanding Officer of the Section to the Headquarters S. O. S., from which these are transmitted by G-4, S. O. S. to the office of the D. M. T. C. to be filled from the transportation available, according to the activities and relative transportation necessities in each territorial section.

DETAILED METHOD OF HANDLING AND ASSIGNING MOTOR VEHICLES TO UNITS IN THE A.E.F. BY THE OPERATIONS BRANCH, HEADQUARTERS MOTOR TRANSPORT CORPS

528. Motor vehicles arriving in France are received at the various American Base Ports, and it is necessary to daily co-ordinate these receipts in order that the entire amount available for assignment may be sent forward to units in the field from these various points.

529. The Motor Transport Officer of each Reception Park (Base Ports) sends forward to the office D. M. T. C. daily a telegraphic report of vehicles on hand ready for re-issue. These telegraphic reports do not cover the vehicle actually received on that particular date, but on the contrary the vehicles which have been previously received, conditioned by the park and made ready for issue. Exhibit "A" is a sample telegraphic report from Base Ports showing the vehicles that may be assigned for immediate delivery by this office.

530. In order to obviate accumulative errors in these daily reports, a weekly inventory covering the vehicles made ready for issue during the week, less the assignments that have been made by this office, is sent forward from each Base Port at the close of the week's activities. Exhibit "B" covers this telegram.

531. These Daily Telegraphic Reports are daily consolidated into one report, which shows the number of vehicles ready for issue by make and type for each Base Port. This is the report used by this office in making assignments, and in reality is a current ledger of stock on hand. Exhibit "C" covers the report as compiled for one Base Port.

532. On account of the existing shortage of motor vehicles the allotment of priority and assignment of equipment is not determined by this office, but is determined by G. H. Q. There is, therefore, sent forward to G. H. Q. a daily report covering all vehicles in France which are available for issue. This report is so arranged that it gives in detail all vehicles available for assignment throughout France. The plan adopted by G. H. Q. is that the number of motor vehicles are pro rated into three main subdivisions; they are as follows:

Ten per cent. of the receipts are normally allotted to units engaged in S. O. S. activities, while the remaining 90% is allotted to combat units. The vehicles falling in this 90% either are assigned by this office in bulk to G-4, 1st Army, which in turn makes the individual assignments to the combat units, or G. H. Q. directly arranges through this office for assignments to the combat units in the various training areas throughout the S. O. S. In order to have vehicles available for assignment to the Army, a certain portion of the vehicles are sent forward to the Advance Section, where they are allowed to accumulate at the Organization or Issuing Park, from where the vehicles are in turn assigned to individual units of the Army under the direction of G-4, 1st Army. It is, therefore, necessary to cover in the report that goes forward to G. H. Q. the vehicles that are on hand at the Base Ports, and the vehicles that have been sent forward for redistribution in the Advance Section, also vehicles which belong to the S. O. S. under the 10% allotment. Exhibit "D" covers this report. The following is an explanation of "Daily Report of Motor Transportation in Park at D....., in the Base Ports, and en route to D.....:

Line one covers vehicles actually reported by telegram as being on hand in the Advance Section.

Line two covers these vehicles which have been assigned by this office, but which the Advance Section has not, on that date, received telegraphic notice.

Line three covers vehicles actually on hand in the Advance Section.

Line four covers vehicles which have been sent forward from the Base Ports to meet the demands for assignments emanating from the Advance Section.

Line five is the balance or total that will eventually be available for assignment from the Advance Section.

Line six covers vehicles which are unassigned at the Base Ports.

Line seven is the total of all vehicles in France which have not been assigned.

Line eight represents the individual requests from G. H. Q., which must necessarily be subtracted from the amount unassigned as represented in Line 7.

Line nine is a final balance representing the amount upon which G. H. Q. may draw in making future assignments.

Lines 10 to 14 cover the receipts and assignments on the date the report is made out.

Lines 16 to 20 cover S. O. S. receipts and assignments.

Lines 21 to 28 cover existing disrepancies between the 10% and 90% allotted to the S. O. S. and Combat Units, respectively.

533. The data on line 9 of this report is daily telephoned to G. H. Q., thus advising those Headquarters of the amount of transportation which they can draw on for assignments; the report itself going forward daily by courier advises them of the details as already outlined.

534. G. H. Q. establishes priority of all assignments to Combat Units and forwards weekly to this office what is commonly known as G. H. Q. "Priority Lists." This list specifies the units, according to item numbers, that are to be assigned and supplied transportation. Exhibit "E" covers this Priority List. The transportation assigned on this sheet is then filled according to its sequence, as regards the item numbers. In certain instances G. H. Q. calls on this office, either by telephone or telegram, to give certain items precedence over others, but in general the items are filled according to their priority sequence, as shown on the list.

535. In order to check back the deliveries made to units as authorized on the Priority Sheet, a slip goes forward daily to G. H. Q. covering the item numbers delivered; that is, the office is advised by telegraphic reports of the delivery of all vehicles, which are in turn reported to G. H. Q. according to the item number which they comprise. Exhibit "F" covers this report.

536. The system established in this office for the handling and making of assignments and also to have at hand at all times data which is quickly available on the status of assignments is as follows:

(a) When a G. H. Q. Priority Sheet is received in this office, the form Exhibit "G" is made out covering each individual assignment. This form shows the unit to which the assignment is made, and the location of same as given by the Adjutant General's Office, the authority for assigning the vehicles, and the number of vehicles authorized. Exhibit "H," known as the Master Sheet, also contains the data in duplicate. The Master Sheet Exhibit "H" is placed in a folder, which is filed for ready reference, either under the name of the unit or the name of the town at which unit is located. Form Exhibit "G," covering the authorization of the assignment, is then forwarded to the desk at which all assignments are made. The officer at this desk has available Exhibit "C," which is the daily report of the vehicles on hand, and a comparison of the assignment sheet with this data shows whether the vehicles enumerated are available and from what points they can be forwarded. This officer sends forward necessary telegrams to the Base Ports making the assignments from the Base Ports, and also notifies the units that the assignments have been made, that the vehicles will be delivered, or that the unit to which the vehicles are assigned must send personnel to take delivery of same. Exhibit "IG" covers this sheet as filled out after the assignment has been made. Exhibit "K" and "L" cover the wires sent forward advising of assignment. The assignment sheet then moves forward to the Files Section, where the data is placed on the Master Sheet showing the assignment that has been actually made. If any shortages exist, as shown on the model sheet attached, a new assignment sheet is made out covering the existing shortage, and this assignment sheet covering the shortage goes forward again to the assignment desk, where the shortages are eventually filled. Copies of telegrams, Exhibits "K" and "L" are placed in the

folder with the Master Sheet for future reference. In this connection a daily list is also compiled covering all assignments made on that date, with telegram numbers making these assignments. It is then necessary to check up the actual delivery of the vehicles from the Base Ports to the Units.

(b) The assignment sheet then passes to the Convoy Department, where the sheet is held awaiting advices of the vehicles leaving the Base Ports. Exhibit "M" covers the telegram sent from the Base Port advising the convoy has left for destination. Exhibit "N" covers telegram that is sent to this office by convoy officer, advising of his progress en route. Exhibit "O" is the final telegram sent to this office advising of the arrival of the convoy at destination.

(c) On the back of the assignment sheet the above data is tabulated, showing departure, progress and arrival of convoy at destination, and remarks cover any shortage that might exist in the delivery of the vehicles. The sheet, with this data, is then complete and is placed in the file, together with the Master Sheet.

537. The above covers the system employed in the assignment of vehicles to Combat Units, and the same is employed in assigning vehicles to the S. O. S. organizations, with the exception that requests therefor are received by the Territorial Commanders of the various Sections; and the vehicles are assigned to the Commanding General, who in turn makes distribution as he deems advisable to the units within command.

EXHIBIT "A"

Signal Corps, United States Army

Telegram 8216.

Number	Time Filed	Check

Received at

5 SANY 73 OB

S-N. Sept. 26

Director Motor Transport Corps,

T-

Standard vehicles made R F I twenty fifth four Dodge sedans four Dodge 1-2 ton light delivery four Ford one ton light delivery two Ford 3-4 ton light delivery one F W D three ton one G M C 11-2 ton nine G M C class B three ton, 7 Nash Quad two ton ammunition three Riker three ton trucks period

M-

830AM

A True Copy.

CFL.

EXHIBIT "B"

Signal Corps, United States Army

Telegram

7863.

Number	Time Filed	Check

Received at

100 sa ho 148 ob

S-N. Sept. 22, 1918

Director of Motor Transportation Corps

T-

Weekly inventory, standard vehicles twenty second minus assignments ordered but not delivered 1 Dodge Touring, 8 Cadillac Touring, 1 Hudson Touring car, 1 Dodge Sedan, 11 Ford Light Delivery, 14 G M C 1 1-2 ton, 7 Garford 1 1-2 ton 3 Nash Quad, 22 F W D 3 ton, 13 Packard 3 ton, 27 Riker 3 tons, 3 Mack 5 1-2 ton trucks, 7 Indian MC, 25 Harley Davidson MC, 2 Excelsior SC, 2 Columbia Bicycles, Last Five wires taken into account t 65o, T 649, T 952, T1035, 1040 period.

Bird

Form 125 B 625p 3--2191

A True Copy.

CFL.

130

EXHIBIT "C"

VEHICLES ON HAND READY FOR ISSUE

	Invty. 9-30-Oct.	1	2	3	4	5
Cad. closed.....						
Cad. touring.....	1	1	2-3	3-2	2-1	2
Dodge closed.....	6-1-0				1-0	
Dodge touring....					1-0	
Ford touring.....						
Hudson.....	1	1	1	1	1	1
Ford lt. dely.....	8-3-2	2	6-0	7-5	5	11
Dodge lt. dely.....	5	3	3	5	5	5
G. M. C. 1½.....	10	11	12	17	20	23
Garford.....	2	2	2	2	2	2
Nash steel.....	98-97	106	109	110	111	115-103
Nash wood.....	6-0					
P. A. 2-T.....						
Q. M. C.....	1-0			3-0	3-1	
F. W. D.....	18	19	20	20	20	20
Riker.....	1-0			8-3	3-0	
Packard.....	6-5-2-0	2	3-1	2	8-0	2-0
P. A. 2-T.....				4-3	8	8
Mack 5-T.....						
P. A. 5-T.....				1	13-6	19-0
H. D. Solos.....	2	1	1	5-5	5	5-4-1
H. D. S. C.....			16	16	16	16-15-4-1
Ind. Solos.....	51	53	63	133-113-103	103-3	3
Ind. S. C.....	4					
Excelsior S. C....						
Bicycles.....	5	5 S-N	5	5-0		

EXHIBIT "D"

TRANSPORTATION IN PARKS AT LANGRES AND DIJON, AT BASES AND EN ROUTE TO DIJON

For Sept. 26, 1918

		Cars.	L.D. Tons.	M.C.	B.C.
1.	Mt. at Langres less assgts. ordered	109	9	78	421	306
2.	Minus assgts. made by us and not by them	14	93	393	42	220
3.	Total minus or plus at Langres	123	84	315	463	526
4.	Plus mt. en route or in ports	160	109	405	506	552
5.	Balance on hand or en route	37	25	90	43	26
6.	Vehicles at bases, less assgts	64	61	308	236	281
7.	Total on hand for assgt. in France	101	86	398	279	307
8.	Vehicles ordered by G. H. Q. not assgd (Items include No. 105).	44	0	250	38	0
9.	Balance for assgt. in France	57	86	148	241	307
10.	Total for Sept. 25	98	75	159	308	307
11.	Plus receipts	15	17	350	7	0
12.	Total	113	92	509	315	307
13.	Minus assgts.	12	6	111	36	0
14.	Balance (should equal No. 7)	101	86	398	279	307
15.	Error	0	0	0	0	0
16.	SOS Sept. 25	19	71	2810	218	154
17.	Plus 10% receipts (10% of No. 11)	1	2	35	7	0
18.	Total	20	73	2845	225	154
19.	Minus assgts. to SOS	17	37	190	28	35
20.	Total SOS statement	3	36	2655	197	119
21.	Prev. allowed SOS on 30% basis	19	63	504	104	154
22.	Plus 30% receipts today	1*	5	105	2	0
23.	Total	20	68	609	106	154
24.	Minus assgts. to SOS	17	37	190	28	35
25.	Total SOS credit on 30% basis	3	31	419	78	119
26.	Balance for assgt. shown above (No. 9)	57	86	148	241	307
27.	Minus total SOS credit (No. 25)	3	31	419	78	119
28.	Balance for assgt. of GHQ	54	55	271	163	188

*30% is 4 cars, but only 1 is necessary to make 30% allowance equal SOS credit on 10% basis.

EXHIBIT "E"

ORDERS FOR ISSUE OF MOTOR VEHICLES

Item No.	To	Automobiles	Motorcycles (with S. C. unless otherwise specified)	Trucks	Bicycles
160	—th Ammn. Tr. with —th F. A. Brig.			20-ton	
165	—th Ammn. Tr. with —th F. A. Brig.			20-ton	
166	Howitzer Regt. with —th F. A. Brig.	5	10	26 Amn. Trks.	20
167	Howitzer Regt. with —th F. A. Brig.	5	10	26 Amn. Trks.	20
168	Howitzer Regt. with —th F. A. Brig.	5	10	26 Amn. Trks.	20
169	Howitzer Regt. with —th F. A. Brig.	5	10	26 Amn. Trks.	20
170	—st Arty. Regt. C. A. C.			25 Amn. Trks.	20
171	Heavy Artillery School			2 3-ton	
172	—th A. A. Mchn. Gun Bn. (Army School Area)	1	2	6 1½-ton	
173	Central Records Office G.		5		
174	Motor Truck Co. 304			5 3-ton Riker	
175	Maj. P. A. Shaffer, San. C. Dir. Food Nutrtn. Sect.		15		

EXHIBIT "F"

REPORT OF CONVOYS DELIVERED ON YOUR ITEM NUMBERS, SHEET NO. 20, OCTOBER 9, 1918

On item No. 102 delivered 10/1.	20 Pierce Arrow 5-ton trucks. 6 GMC 1½-ton trucks. 2 Dodge open touring cars. 1 Dodge closed touring car. 15 Indian motorcycles and s. c.
Item No. 79, delivered 10/1. Item No. 111, delivered 10/5.	
On item 64, delivered —.	4 Harley-Davison motorcycles and s. c., 9/24. 2 Ford open touring cars, 9/28.
Item No. 82, delivered —.	2 Ford open touring cars, 10/5. 5 Ford L. D., 10/5. 3 A. E. C., 3-ton, 10/3. 12 Indian motorcycles, 10/3. 12 Indian side cars, 9/30. 6 G. M. C., 1½-ton, 10/5.
On item 103, delivered —.	15 Indian motorcycles and side cars, 9/29.
Item No. 100.	3 Pierce-Arrow, 2-ton, 10/7. 8 Harley-Davison motorcycles and side cars, 10/7.

EXHIBIT "G"

Assignment No. 172 October 11th, 1918.

UNIT th Anti-Aircraft Machine Gun Battalion

Address B M (Station obtained from A. G. O.)

Reference

G. H. Q. weekly order 10/7—1 Car, 6—1 ½ ton truck.

2 M. C. & S. C.

	CARS		Lt. Del.	TRUCKS	Tons	M. C.	S. C.	B. C.	Spec.
	Lt.	Hvy.		1½ Ton					
Authorized	1			6	9	2	2		
Assigned									
Short									
Over									

Date	No.	Vehicle	From	W-R-P	W. V.	Del.	Personnel and Remarks

CANCELLATIONS.

(Over)

CONVOY DATA

CONVOYS	ITEMS	LEFT	ARR.	REMARKS

SHORTAGES AND REMARKS

EXHIBIT "G-1"

Assignment No. 172. October 11, 1918.

UNIT th Anti-Aircraft Machine Gun Battalion

Address B M (Station obtained from A. G. O.)

Reference

G. H. Q. weekly order 10/7—1 Car, 6—1½ ton trucks.

2 M. C. & S. C.

	CARS		Lt. Del.	TRUCKS 1½ T.	Tons	M. C.	S. C.	B. C.	Spec.
	Lt.	Hvy.							
Authorized	1			6	9	2	2		
Assigned	1			6	9				
Short						2	2		
Over									

1918.

Date	No.	Vehicle	From	W-R-P	W. V.	Del'd.	Personal & Remarks
10/12	1	Dodge open	St. N-	T 65	T 72		Instruct Unit to send
	6	G. M. C.; ½-T	St. N-	T 65	T 72		personnel to take
							delivery.

Note:—(New sheet is then made out for existing shortage of 2 M.C. and S.C.).

CANCELLATIONS.

(Over)

CONVOY DATA.

CONVOYS	ITEMS	LEFT	ARR.	REMARKS
10/20 No. 600	1 Dodge 6 G.M.C.—1½-ton trucks	10/19	10/25	Convoy held at F— on account gasoline. One G.M.C. Dropped at B—for repairs.

SHORTAGES AND REMARKS

10/26. One G. M. C. re-assigned from B. S. No.—

to take place of truck dropped at B—

EXHIBIT "G-2"

MASTER SHEET

UNIT Anti-Aircraft Mach. Gun Bn.

ADDRESS From A. G. O.

	CARS		Lt. Del.	Trucks	Tons	M. C.	S. C.	B. C.	Spec.
	Lt.	Hvy.							
Authorized	1			6	9	2	2		
Assigned	1			6	9				
Short	0			0	6	2	2		
Over									

1918 ASSIGNMENTS

Date	No.	VEHICLES	From	Del'd	Date	No.	VEHICLES	From	Del'd
10/11	1	Dodge open	St.-N	10/25					
	6	Q. M. C. 1½ T	S-N				Note:		
							Date of delivery is filled in when		
							Assignment Sheet (Exhibit "I-G") is		
							returned to the file from the Convoy		
							Department, and any shortages noted		
							under "Cancellations." A new Assign-		
							ment sheet is then made out to replace		
							the shortage.		

CANCELLATIONS

10/25	1	G.M.C. 1½T								

(over)

REFERENCES

G. H. Q. weekly order 10/7, 1 car.

6—1½-ton trucks, 2 M. C. and S. C.

SHORTAGES AND REMARKS

EXHIBIT "K"

Signal Corps, United States Army

Telegram

Number	Time Filed	Check

Send the following Message:

141

Tours, October 12, 1918.

Motors St. N------

T 65 period One Dodge touring car comma six G. M. C. one and one half ton pneumatic tired trucks assigned----th Anti Aircraft Machine Gun Battalion period

W--------

EXHIBIT "L"

Signal Corps, United States Army

Telegram

Number	Time Filed	Check

Send the following Message:

Tours, October 12, 1918.

C. O.,----th Anti Aircraft Machine Gun Battalion,

B-------, M-------

T 72 period Send personnel to take delivery of one Dodge touring car and six G. M. C. one and one half ton pneumatic tired trucks assigned you from M. R. P. S----- N----- period

W--------

EXHIBIT "M"

Signal Corps, United States Army

Telegram

Number	Time Filed	Check

Send the following Message:

148

S----N----, October 20th, 1918.

Motor, T----

4 P. M. October 19 period Convoy one hundred thirty six period one Dodge touring car and six G. M. C. trucks your assignment T 65 destination S----Anti Aircraft Machine Gun Battalions comma B----comma M----comma Sgt. Charles Brown pilot comma route one period

Jones

2 42 P

EXHIBIT "N"

Signal Corps, United States Army

Telegram

Number	Time Filed	Check

Send the following Message:

C----Oct. 20, 1918

Motors, T

Convoy S---N---one hundred thirty six comma C--- comma October twenty period one G. M. C. left at D----on account broken wheel period

Sgt. Brown

8 41 PM

EXHIBIT "O"

Signal Corps, United States Army

Telegram

Number	Time Filed	Check

Send the following Message:

B----, October 25, 1918

Motors, T----

Convoy S---- N---- one hundred thirty six comma arrived
B---- one G. M. C. dropped at D---- period

Sgt. Brown

7 P

UNIT EQUIPMENT LISTS

538. *UNIT LIGHT REPAIR TRUCK EQUIPMENT.*

Quantity.	*Name of Article.*
1	Book, Log
1	Box of tools, to include:
24	Blades, hack saw
1	File, flat, bastard, 12"
1	File, flat, semi-fine, 10"
1	File, round, bastard, ½"
2	Files, magneto point
1	Hammer, ball-pein, 2-lb.
2	Hammers, lead, small
1	Hammer, lead, large
1	Hatchet
1	Hydrometer, acid
1	Hydrometer, anti-freeze
1	Iron, soldering
1	Knife, for tires
2	Lifters, valve
1	Pliers, adjustable, 10"
1	Pliers, electrical, side-cutting, 8"
1	Rule, folding, 6-foot
1	Saw, hand, cross-cut, 26"
1	Saw, hack
1	Screwdriver, offset, 6"
2	Scrapers, carbon, set
1	Torch, gasoline, soldering
1	Wrench, monkey, 24"
1	Wrench, pipe, 8"
1	Wrench, pipe, 14"
1	of each special wrench supplied with vehicle company.
1	Box of supplies to contain:
25	Assorted carriage bolts with nuts
25	Assorted machine bolts with nuts
3	Batteries for flashlight
3	Bulbs for flashlight
100	Cap screws (U. S. and S. A. E.) with castle nuts
25	Ft. high tension cable
10	Ft. low tension cable
12	Sheets emery cloth, No. 00
12	Sheets emery cloth, No. 1
1	Box compound for valve grinding
3	Clamps, water hose, 1" to 2", or
3	Clamps, water hose, 2" up
12	Grease and oil cups, assorted from sizes used on trucks in company
6	Gaskets, spark plugs, ⅞"
6	Each exhaust and intake gaskets (as supplied for make of truck in company)
12	Assorted gas line fittings
6	Ft. hose, radiator, of correct size for trucks in company
6	Ft. rubber tubing, ⅛" D.
1	Lb. red lead
10	Lbs. assorted nails
1	Litre neatsfoot oil (this item to be omitted if truck has disc clutch)
5	Yds. packing, tallow wicking for pump packing
100	Assorted cotter pins

Quantity.	Name of Article.
12	Assorted yoke and rod end pins
12	Spark plugs, ⅞"-18
12	Assorted No. 10-32, No. 10-24 and No. 8-32 machine screws with nuts
50	Assorted wood screws
5	Lbs. wire solder
1	Roll friction tape
6	Exhaust valves
200	Assorted lock washers
5	Lbs. wire, No. 14B Ga. (soft steel)
3	Tool bags (No. 291) with the following tools:
1	Engineer's wrench, milled opening ⅜"-$\frac{7}{16}$", length 4½"
1	Engineer's wrench, milled opening ½"-$\frac{9}{16}$", length 5"
1	Engineer's wrench, milled opening ⅝"-⅞", length 6¾"
1	Engineer's wrench, milled opening ¾"-⅞", length 8"
1	Engineer's wrench, milled opening 25/32"-31/32", length 9"
1	Engineer's wrench, milled opening $\frac{13}{16}$"-1", length 9"
1	Engineer's wrench, milled opening $\frac{13}{16}$"-1$\frac{1}{16}$", length 10"
1	Engineer's wrench, milled opening 1$\frac{1}{16}$"-1¼", length 11½"
1	Adjustable "S" wrench, 6"
1	Adjustable "S" wrench, 10"
1	Spark plug wrench, ⅞"
1	Spark plug wrench, ½ P. Th.
1	Punch, solid, ⅝" point
1	Pliers, adjustable, 6"
1	Screwdriver, 6"
1	Screwdriver, 12"
1	Cotter pin extractor, 6"
1	File, flat, semi-fine, 10"
1	Hammer, ball-pein, 2-lb.
1	Roll ¾" friction tape
1	Chisel, cold, ¾"
2	Crow bars, 5 ft.
2	Pry bars, 2½ ft.
2	Tackle blocks, double sheave, for 1" rope
300 Ft.	Manila rope, 1"
1	Sledge hammer, double face, 8"
1	Jack, 10-ton
3	Flashlights

539. *UNIT MOTORCYCLE EQUIPMENT.*

1	Headlight, 8" face	Lighting Assembly
1	Headlight bracket	
1	Headlight connecting tube	
1	Tail light and bracket, complete	
1	Tail light connecting tube	
1	Prest-o-lite tank	
1	Prest-o-lite tank bracket	
1	Mechanical horn	
1	Tire pump and hose, with acorn valve connection	
2	Tire pump frame clips	
1	Tube, inner, 28" x 3"	
1	Plug, spark, ⅞", 18-thread	
1	Tool roll	
1	Pair 6" pliers	
1	Screwdriver	
4	Chain repair links, ⅜" x ⅝" pitch	
1	Chain repair half links, ⅜" x ⅝" pitch	
1	Chain tool	

Quantity.	*Name of Article.*
1	Canvas case, containing three 8" tire tools
¼ lb.	Wire, soft steel, No. 14 Birmingham, Ga.
1	Tire repair kit, consisting of: 6 "Cold" patches, assorted sizes 1 Sandpaper or emery cloth, 4" x 4" 1 Piece inner casing repair fabric, 4" x 4" 2 Tire valve plungers, complete 1 Inside blow-out patch, 28" x 3" 1 Roll tape, friction, ¾"
12	Nuts, assorted. Must include: 2 Front wheel axle nuts and 1 Rear wheel axle nut
12	Lock washers, assorted sizes
12	Filister head screws, assorted sizes
6	Cap screws, assorted sizes

540. *UNIT TRUCK EQUIPMENT.*

3	Benches
1	Book, Log
1	Brush, engine cleaning
1	Brush, washing
1	Brush, wire
1	Bucket, galvanized, 13-litre
1	Bucket, canvas, collapsible
6	Bulbs, electric, Spare-2 Head, 6-V. Sing. Cont. (electrically lighted only), 2 side 6-V. Sing. Cont., 2 tail 6-V. Sing. Cont.
2,4	Chains, tire, for each drive wheel
1	Can, 25-Litre (filled with gasoline—Emergency)
1	Can, 2-Litre (filled with grease—Emergency)
1	Can, 5-Litre (filled with lubricating oil—Emergency)
1	Can, 5-Litre (filled with kerosene—Emergency)
1	Disk, yellow, 12", with staff
1	Dispatch case, canvas
1	Extinguisher, fire, with bracket {Pyrene / Verax, small
1	Flashlight
6	Fuses (electrically equipped only) Cart. 10-A small, 10-A large
1	Gun, grease
1	Gun, oil
1	Horn, signal
1	Jack, 5-ton
2	Lamps, side, oil (when without electric equipment)
2	Lamps, side (when electrically equipped)
1	Lamp, tail, oil, electric or combination
2	Ropes, lash, 1" manila, each 75 feet
2	Locks for tool boxes
1	Oiler
1	Pins, cotter, assorted package
2	Plugs, spark, ⅞"-18 thr., ½" pipe thr.
1	Pick axe
1	Shovel
1	Towing cable, complete
1	Valve, exhaust
1	Valve, inlet
1 ft.	Water pump packing
1 lb.	Waste
½ lb.	Wire, No. 14 ga.
1	Tool kit, bag
1	Cold chisel, ¾"

Quantity.	*Name of Article.*
1	Wrench, engineers, 3/8" and 7/16"
1	Wrench, engineers, 1/2" and 9/16"
1	Wrench, engineers, 5/8" and 7/8"
1	Wrench, engineers, 3/4" and 7/8"
1	Wrench, engineers, 25/32" and 31/32"
1	Wrench, engineers, 1 3/16" and 1"
1	Wrench, engineers, 1 5/16" and 1 1/16"
1	Wrench, engineers, 1 1/16" and 1 1/4"
1	Wrench, adjustable, 6"
1	Wrench, adjustable, 10"
1	Wrench, spark plug, 7/8"-18 thr.
1	Wrench, spark plug, 1/2" pipe thr.
1	Punch, solid, 5/8" point
1	Pliers, combination, 6"
1	Screwdriver, 6"
1	Screwdriver, 12"
1	Extractor, cotter pin, 6"
1	File, flat, 10", semi-fine
1	Hammer, ball-pein, 2 lb.
1	Roll tape, friction, 3/4"
	Wrenches, special (supplied with truck)

541. *UNIT PASSENGER CAR EQUIPMENT.*

1	Book, log		
1	Brush, engine cleaning		
1	Brush, upholstery		
1	Bucket, canvas, collapsible		
6	Bulbs, electric spare	Headlight	6 volts, single contact
			6 volts, double contact
			12 volts, double contact
			12 volts, single contact
		Side-light	6 volts, single contact
			6 volts, double contact
			12 volts, double contact
			12 volts, single contact
		Tail-light	6 volts, single contact
			6 volts, double contact
			12 volts, double contact
			12 volts, single contact
1	Can, 25-Litre (to be filled with gasoline—Emergency)		
1	Can, 5-Litre (to be filled with oil)		
1	Can, 1-Litre (to be filled with grease)		
1	Extinguisher, fire, with bracket		
1	Flashlight		
6	Fuses		
1	Gun, oil		
1	Gun, grease		
2	Lamps, head		
2	Lamps, side		
1	Lamp, tail		
1	Horn		
1	Jack		
1	Lock for spare tires		
	Oiler		
1	Pins, cotter, assorted package		
2	Plugs, spark	1/2", pipe thread	
		7/8", 18 thread	

Quantity.	*Name of Article.*
1	Spring repairer { 2″ spring; 2½″ spring; 2¾″ spring; 3″ spring }
3	Straps, leather, with buckles, ¾″ x 3½″
1	Pump tire (to be omitted if power pump equipped)
1	Tire repair outfit { 2 Cement patches; 2 Cementless patches; 1 Sheet emery cloth; 1 Can powdered chalk; 1 Tube cement; 1 Shoe patch }
6	Tires when equipped with double rack
5	Tires when equipped with single rack
7	Tubes (including 4 on road) for above
1	Set tire changing irons
1 lb.	waste
½ lb.	wire No. 14 B. W. ga.
1	Towing cable (5-ton capacity)
1	Wrench, brace socket (for demountable rims), ⅝″, $\frac{11}{16}$″, ¾″, $\frac{13}{16}$″, ⅞″
1	Tool bag
1	Cold chisel, ¾″
1	Wrench, engineers, ⅜″ and $\frac{7}{16}$″
1	Wrench, engineers, ½″ and $\frac{9}{16}$″
1	Wrench, engineers, ⅝″ and ⅞″
1	Wrench, engineers, ¾″ and ⅞″
1	Wrench, engineers, $\frac{15}{16}$″ and 1″
1	Wrench, engineers, $\frac{15}{16}$″ and 1$\frac{1}{16}$″
1	Wrench, monkey, 6″
1	Wrench, adjustable "S," 10″
1	Wrench, spark plug, ⅞″-18 thread, ½″-pipe thread
1	Punch, solid, ⅝″ at point
1	Pliers, combination, 6″
1	Screwdriver, 6″
1	Screwdriver, 8″
1	Extractor, cotter pin, 6″
1	File, flat, 10″, semi-fine
1	Hammer, ball-pein, 2-lb.
1	Roll tape, friction, ¾″
	Wrenches, etc., special per car specifications
	Wrenches, hub cap, special
	Wrenches, spark plug, special
	Wrenches, magneto, special
1	Non-skid chain for each driving wheel

542. *PERSONAL (INDIVIDUAL) EQUIPMENT*

(For each member of a motor truck company.)

ORDNANCE PROPERTY

For truckmasters and mechanics

1 automatic pistol, caliber .45, model 1911.
2 magazines, pistol, extra.
21 cartridges, ball, pistol.
1 canteen and cover.
1 can, bacon.
1 condiment can.
1 cup.
1 fork.
1 haversack.
1 knife.
1 meat can.
1 pack carrier.
1 pouch for first-aid packet.
1 spoon.
1 pistol holster, caliber .45 automatic.
1 pistol belt, without saber ring.
1 pouch for first-aid packet.
1 mask, gas, French.
1 mask, gas, British, respirator.
1 helmet, trench.

ORDNANCE PROPERTY—(*Continued*)

For all enlisted men except truckmasters and mechanics.

1 United States rifle, caliber .30.
1 front-sight cover.
1 oiler and thong case.
1 thong and brush.
90 ball cartridges, caliber .30.
1 canteen.
1 canteen cover.
1 can, bacon.
1 condiment can.
1 cartridge belt, caliber .30.
1 cup.
1 fork.
1 haversack.
1 knife.
1 meat can.
1 pack carrier.
1 pouch for first-aid packet.
1 spoon.
1 boot, rifle.
1 mask, gas, French.
1 respirator, gas, British.
1 helmet, trench.

MEDICAL PROPERTY

1 first-aid packet

QUARTERMASTER PROPERTY

1 bag, barrack.
1 bed sack.
3 blankets (add one for winter).
Clothing as prescribed.
1 goggles.
1 overcoat.
1 slicker.
1 tent, shelter-half mounted.
1 leather vest for motorcycle driver.

MISCELLANEOUS

Lieut. will carry:
1 case for maps and papers (canvas).
1 compass.
1 whistle.

Truckmaster will carry:
1 case for maps and papers.
1 compass.
1 whistle.

Asst. Truckmaster will carry:
1 map of areas.
1 compass.
1 whistle.

Messenger will carry:
1 case for papers.

Mess truck equipment.
2 axes and helves.
2 brushes, scrubbing.
2 buckets, G. I.
1 box, bread.
1 board, bread.
1 can G. I., 15-gal.
4 cans, 5-gal., heavy metal.
1 corkscrew.
1 fryer, wire.
2 hatchets.
1 opener, can.
10 soap, pounds.
1 stone, whet.
4 towels.
1 field range, No. 1, complete with all accessories.

CLOTHING, ETC.

As prescribed in current orders.

(Subject to Revision)

543. Maximum Load for One Truck—Ammunition

Size	Article	1½-T. Q. M. 10′x5′1″x2′	3-T. Q. M. 12′x6′6″x2′	5-T. Q. M. 12′x6′6″x2′	3-T. Or. 9′6″x3′7″x3′	Remarks.
37m/m	Complete Cart. Fuze	1800 (30 cases) 1848 56	5760 (96 cases) 297 33	5760 (86 cases)	3920 (57 cases)	Cases on bottom
75m/m	Complete Cart. Fuze	135 (15 cases)	270 (30 cases)	459 (51 cases) 22	261 (29 cases)	13 trks for 1 lot 1 trk or 2 fuzes
4.7 Gun	Complete Cart. Fuze	50 (25 cases)	102 (51 cases)	170 (85 cases)	102 (51 cases)	ditto
5″ S. C. Gun	Shell Fuze Charge Primers	52 loose or 12 cases 166 (wt. full)	104 loose or 24 cases 333 (wt. full)	172 loose or 40 cases 400 (space full)	104 loose or 24 cases 133 (space full)	Shell on end case flat Cartge. on end
155m/m	Shell Fuze Charge Primers	32 loose or 13 cases 150 cases (wt. full)	63 loose or 27 cases 250 cases	115 loose or 45 cases 250 cases (space full)	63 loose or 27 cases 96 cases (space full)	Shell on end case flat Cartge. on end
6″ S. C. Gun	Shell Fuze Charge Primers	33 loose or 11 cases 75 cases (wt. full)	66 loose or 22 cases 150 cases (wt. full)	110 loose or 37 cases 187 cases (space full)	66 loose 22 cases 102 cases (space full)	Shell on end cases flat Cases on end
8″ S. C. Gun	Shell Fuze Charge Primers	15 loose or 13 cases 26 cases (wt.)	30 loose or 27 cases 48 cases (wt.)	50 loose or 44 cases 54 cases (space)	30 loose or 26 cases 27 cases (space)	Shell on end cases flat Contain. on end
8″ How.	Shell Fuze Charge Primers	15 loose or 13 cases 26 cases (wt.)	30 loose or 27 cases 48 cases (wt.)	50 loose or 44 cases 54 cases (space)	30 loose or 26 cases 27 cases (space)	Shell on end cases flat Contain. on end

Size	Article	1½-T. Q. M.	3 T. Q. M.	5 T. Q. M.	3 T. Ord.	Remarks
9.2" How.	Shell Charge Fuze Primer	10 loose 132 loose 66 cases	20 loose 182 loose or 91 cases	34 loose 182 loose or 91 cases	20 loose 88 loose or 44 cases (space)	Shell on end Contain. on end
10" S. C. Gun	Shell Fuze Charge Primer	 13 cases (wt.)	12 26 cases (wt.)	19 35 cases (space)	11 20 cases (wt.)	Shell laid down Cases on end
12" S. C. Gun	Shell Fuze Charge Primer	4 6 cases	 9 cases	14 9 cases	8 7 cases	Shell laid down Cases laid down
S. AA	Box 1200 Rounds .30	31 boxes 37,800 Rounds	62 76,800 Rounds	103 boxes 123,600 Rounds	31 boxes 37,200	Box 1.514 cu. ft. 96.5 lbs.
	Box 1536 Rds. 8 m/m. Hotchkiss MG	28 wooden boxes 39,936 Rounds	56 wooden boxes 81,405 Rds.	90 wooden boxes 138,240 Rds.	26 boxes 3993	Box 1.38 cu. ft. 112 lbs.
Sky Rocket Shells Star Shells				45 cases		Wt. per cases 127 lbs.
Parachute Shells				250 cases		No. per case, 30 Wt. per case, 42 lbs.
Grenades			200 cases	300 cases		No. in case, 20 Wt. of case, 32 lbs.
Stokes Gun		80	160 cases	220		No. in case, 3
Liquid Fire Box		35	70			
Smoke		3500 27 1350	7000 54 2700			
Tear Gas		107 2675	214 5350			

ARTICLES	UNIT			1½ TON TRUCK 10 x 5'1" x 2'				3 TON TRUCK 12 x 6'6" x 2'				5 TON TRUCK 12 x 6'6" x 2'			
				Not Lashed		Lashed		Not Lashed		Lashed		Not Lashed		Lashed	
	Pkg.	Wt. Lbs.	Cu. Ft.	No. Units	Tons Wt.	No. Units	Tons Wt.	No. Units	Tons Wt.	No. Units	Tons Wt.	No. Units	Tons Wt.	No. Units	Tons Wt.
Rations	Box	72	2.67	46	1½	40	1½	72	2½	83	3	72	2½	136	5
Beans, Flour, Potatoes, Rice, Sugar	Bag	100	3.75	30	1½	30	1½	60	3	60	3	100	5	100	5
Coffee	Box	88						68	3						
Cornmeal	Bag	90	3.40	33	1½	33	1½	66	3	66	3	110	5	110	5
Complete iron ration, Trench ration								1000		1000					
Vinegar	Case	156	5.33	12	1	18	1½	18	1⅜	38	3	18	1⅜	3	2¾
Hay	Bale	100		26	1¼	26	1¼	60	3	60	3	60	3	60	3
Oats	Bag	100		26	1¼	26	1¼	50	2½	50	2½	50	2½	50	2½
Wood Fire (Green)	Cord		128				¾				1½				2¼
Blankets	Box	47	5	22	½	36	⅞	36	⅞	60	1½	36	⅞	60	1½
Clothing	Box	64	5	22	⅝	36	1⅛	36	1⅛	60	2	36	1⅛	60	2
Cots	Bdls.	106	4.72	22	1 1/3	28	1½	33	1¾	56	2	33	1¾	84	3
Axes	Crate	50	6	60	1½	60	1½	120	3	120	3	200	5	200	5
Helves (ax)	Crate	100	4.72	24	1¼	30	1½	31	1½	60	3	31	1½	75	3¾
Helves (pickax)	Crate	67	3.07	35	1⅛	45	1½	47	1½	90	3	47	1½	100	3⅝
Pickaxes	Crate	146	2.47	20	1½	20	1½	40	3	40	3	60	4⅜	69	5
Shovels	Bdls.	35	1.05	86	1½	86	1½	140	2⅜	178	3	140	2⅜	200	3½
Tents (Conical)	Bale													5	5
Tents (Pyramidal)	Bale	115	6.50	16	⅞	26	1½	24	1⅜	52	3	24	1⅜	52	3
Coal	Ton		9	1½				3				5			
Hard Bread	Case									60	4 1/6				
Bacon	Case	100	2.2	30	1½					54	3				
Bully	Case	150						38							

ARTICLES	HOW PACKED	LOADED AND LASHED 1½-T.	LOADED AND LASHED 3 T.	5-T.	
Gas Tanks	350 lbs. 50 gal. full	400 gal. 8	250 gal. 15	1250 gal. 25	
	50 gal. empty	16	30	30	
	13 gal. full	390 gal. 30	780 40	1300 100	
	13 gal. empty	84	125	125	
Tires, Pneumatic	Assorted Sizes	100	200	200	
Mail Bags		60	125	150	
Tarpaulins		25	50	70	
Barracks Bags		70	120	150	Wt. of one Barracks Bag 42 lbs.
Trunks, Army		30	60	60	
Men	With Baggage	12	20	25	
Men	Without Baggage	20	40	45	
Indian Motorcycle	Overseas Crate	1½ T. 5	2¾-T. 11	2¾-T. 11	Placed on end
Indian Side Car	Overseas Crate	1800 lbs. 6	2700 lbs. 9	9	
M. Gun Section and Hq. Company					23 Trucks to move section
Bicycles	Crates		7	7	3 bicycles per crate

	1½-Ton Truck	3-Ton Truck	5-Ton Truck
Barracks, "Adrain" (21'x98')		1/7	1/7
Bricks	750	1000	1700
Camouflage, finished, rolls of 20 sq. yds.	80	100	100
Cracked stone, cubic yds.	1½	3	5
Cement, bbls. (4-100 lb. bags)	8	15	25
Corrugated, iron sheets, sq. ft.	1200	3000	3000
Duck-boards (6'6"x 1'6")	100	150	150
Expanded metal, large mesh, sq. ft.	1600	2500	2500
I-Beams, 4", 12', 0" long, pcs.	40	80	110
I-Beams, 6", 15', 0" long, pcs.	20	40	65
Lumber, ft. b. m., 13' long, 5' high	800	1600	2600
Nails, all sizes, 100-lb. keg	30	60	80
Paint, 50 gal. bbls.	4	8	14
Pickets, wood, 50% long and 50% short	350	500	450
Posts, angle iron, 50% 5' 10" long; 50% 3' 6" long.	500	1000	1700
Posts, screw, 50% long and 50% short	700	1000	1200
Rails, 10' 0" long, 25-lb. per yd.	40	80	110
Rails, 15' 0" long, 35-lb. per yd.	20	40	70
Riveting, fascines, 10"x9' 0"	30	35	35
Riveting, gabions, 2' 0"x 3' 2"	25	32	32
Riveting, hurdles, 7' 3"x 3' 2"	50	75	75
Road planks, 5"x 9' 0"	42	70	70
Roofing, felt (216 sq. ft. rolls)	80	130	130
Sand bags, No.	10000	15000	15000
Shelters, steels, large, complete	1	2	2
Shelters, steels, small, complete	2	2	2
Round posts, 6" rough, lineal feet	650	1000	1000
Tar, waterproofing, 50-gal. bbls.	10	20	24
Ties, for narrow gauge, 4' 6"x 6' 6"	46	92	152
Tele. conduit cable spools	1	2	3
Wire, barbed, 50-lb. rolls	40	50	50
Wire, barbed, folding frame, large			50
Wire, barbed, folding frame, small			300
Wire, woven, reinforced, rolls			30
Wire, plain			80
Sheet iron, heavy			50
Sheet iron, medium			110
Observation boxes			2
Abri frames, No. 1			25
Abri frames, No. 2			15
Abri frames, No. 3			30
Galley frame, average 1, 2, 3			20
Trench sides, woven			140

ORDNANCE MATERIAL

547.

	1½-Ton Cases	3-Ton Cases	5-Ton Cases
6" Nawton TMB (complete), (1 rd. complete per case).	70	140	233
3" Stokes TMB (complete), (3 rounds per case)	70	140	233
Cal. .45 pistol ball (2,000 rounds per case)	25	50	83
Cal. .30, mod. 1916 (1,200 rounds per case)	30	60	100
Cartridge belts (dismounted), (100 per case)	20	40	67
Bacon cans (120 per case)	20	40	67
Condiment cans (180 per case)	20	40	67
Meat cans (75 per case)	20	40	67
Canteens (75 per case)	20	40	67
Canteen covers (dismtd.), (200 per case)	20	40	67
Cups (105 per case)	20	40	67
Pack carriers (200 per case)	20	40	67
Haversacks (50 per case)	20	40	67
Front sight covers (1,000 per case)	24	48	80
Rifles (model 1903), 10 per case)	18	35	58
Helmets, steel (25 per case)	20	40	67
Bayonets, rifle (model 1903), (100 per case)	22	44	73
Bayonet scabbards (250 per case)	18	35	58
Pistols (1911), (50 per case of extra mags.)	20	40	67

SIGNAL CORPS MATERIAL

548.

	1½-Ton	3-Ton	5-Ton	Remarks
Wire, twisted, pair, field (1 mile reels)	10 miles	19 miles	25 miles	
Wire, twisted, pair, No. 17, O. D., in coils 600 to 1,000 ft.	75000 ft.	150000 ft.	200000 ft.	
Wire, field, single on ½-mile spools, wooden	20 miles	40 miles	60 miles	
Wire, field, on ¼-mile metal spools, French	10 miles	19 miles	25 miles	
Wire, outpost, twist plait, on ¼-mile metal spools	30 miles	60 miles	80 miles	
Wire, G. I., No. 14, ½-mile coils	30 miles	60 miles	80 miles	
Cable, 10 pr. on 2,500 ft. reel	2500 ft.	5000 ft.	7500 ft.	
Cross-arms, light, 2 pin	1000	2000 ft.	2700	
Cross-arms, light, 8 pin	400	750	950	
Cross arms, heavy, 6 pin	250	400	650	
Lance poles	350	700	850	
Switchboards, 40 - line camp	10	18	24	
Switchboards, 12 - line, monotype	80	175	270	
Switchboards, 4-line, monotype	150	300	450	
Telephones, camp	140	275	400	
Telephones, 1375-B Forestry	150	300	450	

SHIPPING DATA

549.

Items	Lbs. Per Unit	Lbs. Per Pkg.	No. Pkgs. Per Ton	No. Units Per Ton	No. Units Per Trk.	No. Pkgs. Per Trk.
Axes, 12 per box	5½	81	24½	288	863	73
per bale		1000	2	4000	12000	6
Bags, sand, 14"x 33", 2,000						
per bale		338	6	3000	9000	18
Chests, carp	120			16	48	
Hatchets, half, 48 per box		121	16	800	2400	50
Nails and staples		107	18½			56
Paulins, 20'x 60'	132			15	45	
Picks, 24 per box	6½	174	11½	276	827	35
Pick handles, 36 per box	2½	115	17½	630	1890	52½
Pick handles, 60 per box	2½	200	10	600	1800	30
Pick handles, 120 per box	2½	370	5½	1650		16½
Roofing, felt	91½			22	66	
Rope, 1"x 1200'		325	6			18
Shovels, R. P., 6 per bundle	5 2/3	34	59	354	1062	177
Shovels, S. P., 10 per bundle	5 1/3	53	38	375	1125	113
Wire, barb		100	20		60	
Wire, mesh, 4'x 25'		51½	39			117

SUGGESTIONS FOR LOADING CARGOES

550. *LOADING HAY.*—The average load of baled hay for a 3-ton truck is about 60 bales, put on as follows: The first layer in the bottom is placed on edge, lengthwise of the truck; the second layer on their sides, also lengthwise. This fills the bed to within a couple of inches of the top of the side-boards. The third layer, three bales wide, is placed on their sides, crosswise of the body, the center bale being placed with its center over the center line of the body, the bales on either side being placed abutting against this bale and projecting upward and outward over the side-boards. The fourth layer is formed by the center bale being placed on its side lengthwise of the truck, the bales on either side being on their sides and heading crosswise of the body. The fifth layer consists of two bales on their sides heading crosswise and abutting against each other in the center line of the truck. The top layer consists of one bale on its side, heading across the truck, the center of the bale being over the center line of body. As high as 80 bales may be hauled for short distances over excellent roads by slightly opening the third layer, placing a fourth layer the same as the third, an additional layer the same as the fourth and then tapering the remaining load as above indicated. This load is, however, very insecure.

551. *GRAIN.*—The average sack of grain weighs about 160 lbs., the load for a 3-ton truck averaging 37 sacks. This load can be placed entirely within and below the side-boards.

552. *BARRELS AND DRUMS.*—Heavy barrels and drums should be loaded on end in the bottom of the body. If wooden barrels are laid on their sides, the lash of the contents acting together with jarring and bumping will quickly open the seams.

553. *MIXED LOADS.*—Compact and heavy pieces should be sorted out and loaded in the bottom of the trucks, the greatest weight being placed about the middle of the body. Lighter articles should be the next loads, those in more stable form or crates following first, with bulky and fragile articles loaded on top. The

load should be so adjusted that it is firm and stable, and does not hang over the driver's seat, over the sides, or over the tail gate. With bows on the trucks, there is no difficulty in this respect, but without the bows the tendency is to spread out the load as its height increases, thus bringing a damaging pressure upon the side-boards and tail gates. Every effort must be made to keep the load as low as possible, the center of gravity being, if possible, below the top of the side-boards.

554. *LONG LOADS.*—When lumber longer than the body is being hauled, a piece of 4"x4" or thicker material should be secured across the extreme rear end of the truck bed, the tail gate being lowered so that no part of the load will rest upon it. Lumber is then loaded, with the forward ends pushed snugly against the front end gate, and the rear ends projecting beyong the rear of the truck and resting on the 4"x4" above referred to. When longer bulky articles, as water troughs, are carried, they are loaded in the same manner as lumber, and in addition, the front ends are fastened by drawing chains or ropes entirely around the body, and not by securing these ropes or chains to the lash staples on the side-boards, or front-end gates. If this is not insisted upon, the upper part of the side-boards and front-end gate will split and break.

555. *TAIL GATES.*—The tail gate must, with long loads, be completely closed and secured with the tail-gate chains drawn snug. Under no circumstances should the gates be left swinging loose. The practice of fastening tail-gates in a position approaching horizontal, with a view to extending the body and supporting the load, tends not only to break the tail-gate, but also to pull out the iron supports in the ends of the sides, and to bring undue and unnatural strain upon the entire machine.

556. *LASHING.*—After the entire load has been placed on the truck, it should be securely lashed and tightened by carrying the lash ropes provided for this purpose several times across the top of the load and fastening them around the small iron cleats attached to the under side of the body.

TIRE CONVERSION TABLES

PNEUMATIC TIRES

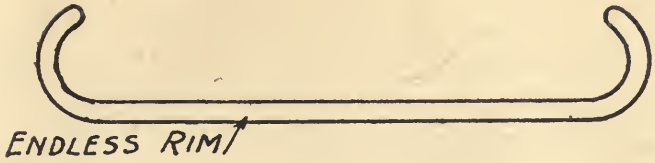
American Sizes	Approximate m/m Equivalent
25 x 2½	650 x 65
27 x 3	700 x 80
27 x 3½	710 x 90
29 x 3½	760 x 90
31 x 3½	810 x 90
30 x 4	765 x 105
33 x 4	815 x 105
35 x 4	875 x 105
32 x 4½	815 x 120
31 x 4½	820 x 120
34 x 4½	880 x 120
35 x 4½	920 x 120
32 x 5	820 x 135
33 x 5	895 x 135
35 x 5	935 x 135
36 x 5	880 x 135
36 x 5	920 x 135
34 x 5½	895 x 150
36 x 5½	935 x 150

TRUCK TIRES

American Sizes	Approximate m/m Equivalent
32 x 3	790 x 75 for 670 wheel.
34 x 3	840 x 75 for 720 wheel.
36 x 3	920 x 80 for 771 wheel.
32 x 3½	810 x 90 for 670 wheel.
34 x 3½	860 x 90 for 720 wheel.
36 x 3½	910 x 90 or 920 x 90 for 771 wheel.
32 x 4	820 x 100 for 670 wheel.
34 x 4	870 x 100 for 720 wheel.
36 x 4	920 x 100 for 771 wheel.
40 x 4	1016 x 100 or 1030 x 100 for 881 wheel.
34 x 5	880 x 120 or 900 for 720 wheel.
36 x 5	930 x 120 for 771 wheel.
40 x 5	1050 x 120 for 881 wheel.
34 x 6	880 x 140 or 900 x 140 for 720 wheel.
36 x 6	950 x 140 for 771 wheel.
40 x 6	1050 x 140 for 868 wheel.
36 x 7	970 x 160 for 771 wheel.
40 x 7	1060 x 160 or 1070 x 160 for 871 wheel.

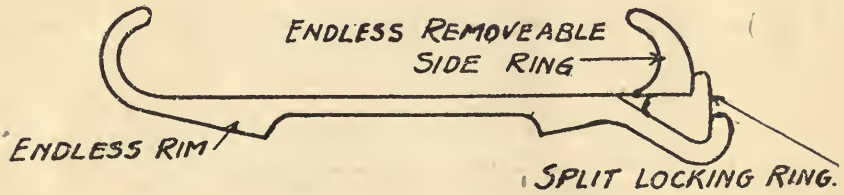
TYPES OF PNEUMATIC TIRE RIMS

REGULAR CLINCHER RIM, TYPE RC



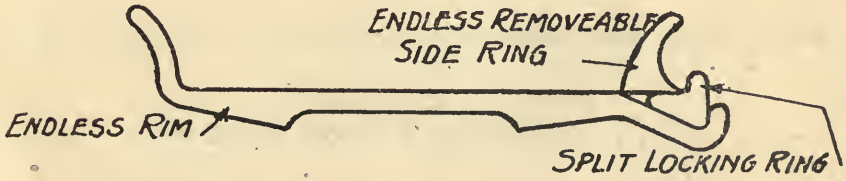
An endless one-piece rim, shrunk direct to wheel, or held direct by spoke nipples on wire wheels.

QUICK DETACHABLE DEMOUNTABLE CLINCHER RIM, TYPE QDDC



Removeable from wheel.

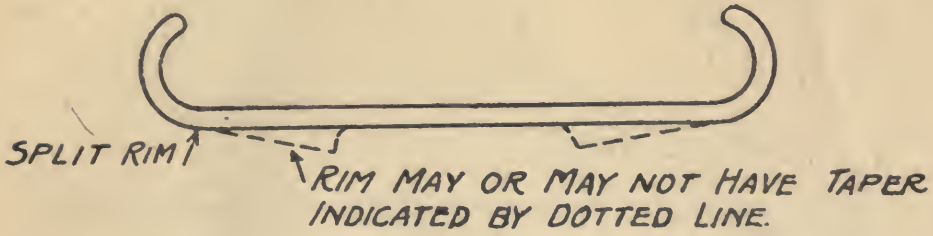
QUICK DETACHABLE DEMOUNTABLE STRAIGHT SIDE RIM. TYPE QDDS



Removeable from wheel

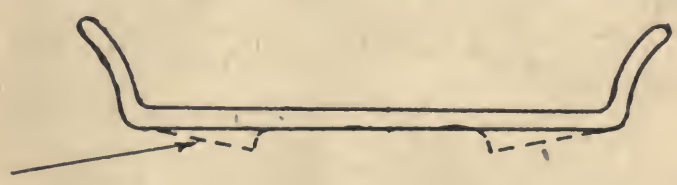
TYPES OF PNEUMATIC TIRE RIMS

DETACHABLE DEMOUNTABLE CLINCHER RIM, TYPE DDC



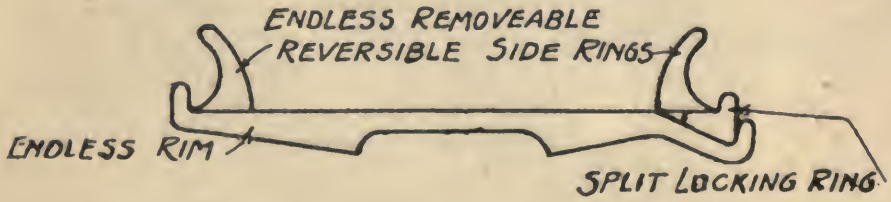
A type removeable from wheel, held in place by several wedge clips, or by wedge ring and forcing clips.

DETACHABLE DEMOUNTABLE STRAIGHT SIDE RIM, TYPE DDSS



Rim may or may not have taper indicated by dotted line. A one-piece ring, usually split transversely. Rim is removeable from wheel, and held in place by several wedge clips, or by wedge ring and forcing clips.

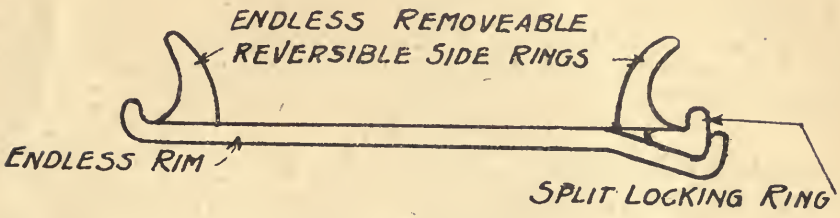
QUICK DETACHABLE DEMOUNTABLE UNIVERSAL RIM, TYPE QDDU



Removeable from wheel. Accepts either straight side or clincher tires.

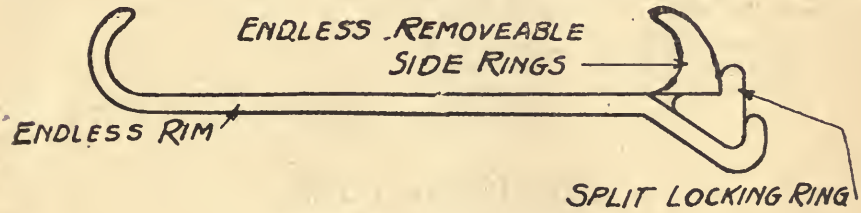
TYPES OF PNEUMATIC TIRE RIMS

QUICK DETACHABLE CLINCHER RIM, TYPE QDC



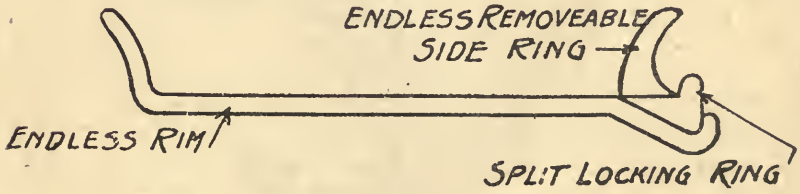
Not removeable from wheel

QUICK DETACHABLE STRAIGHT SIDE RIM, TYPE QDSS



Not removeable from wheel

QUICK DETACHABLE UNIVERSAL RIM, TYPE QDU



Not removeable from wheel Accepts either straight side or clincher tires.

558. *CONVERSION OF METRIC TO AMERICAN MEASURE.*

1 Kilometer	.625 miles
1 Meter	39.37 inches, 3.281 feet, 1.0936 yards
1 Inch	25.4 mm.
1 Mile	1,609 meters
1 Sq. Metre	1,550 sq. inches, 10.76 sq. ft., 1.196 sq. yards
1 Sq. Inch	645 sq. mm.
1 Cu. Meter	35.31 cu. feet
1 Cu. Inch	16.39 cu. cm.
1 Cu. Foot	28.35 liters
1 Gal	3.785 liters
1 Litre	1.057 qts.

For Quick Computation.

1 Kilometer	⅝ mile (multiply kilo by 6)
1 Yard	9/10 meter
1 Hectare	2.471 acres
1 Kilogram	2 1/5 pounds
1° Fahrenheit	5/9° Centigrade
0° Centigrade 32° Fahrenheit	Freezing point of water

French time is counted either in two periods of 12 hours each, the same as American time, or in one period of 24 hours.

Thus in the latter:

10 hours—10 a. m.
13 hours— 1 p. m.
16 hours— 4 p. m.

559.

TECHNICAL TERMS

English	*French*
Axles {Front axle {Rear axle	Essieu d'Avant Essieu d'Arrière
Box, grease	Boitre à graisse
Box, property	Coffre à effets
Box, tool	Coffre à outillage
Box, gear	Boite de vitesse
Belt, fan	Courroie de ventilateur
Belt	Courroie
Bearing	Coussinet
Bolt	Boulon
Brake	Frein
Brush, small	Pinceau
Brush, large	Brosse
Battery	Batterie
Bench, centre	Banc de milieu
Bench, side	Banc de côté
Beams, small	Poultrelles
Beams, iron	Poultrelles de fer
Block, wood	Cale de bois
Bushing	Bague
Book, matricule	Livre matricule
Bar, cross	Barre d'écartement
Can, oil	Bidon d'huile

English	*French*
Can, kerosene	Bidon de petrole
Can, gasoline	Bidon d'essence
Cardboard	Carton
Cardboard, corrugated	Carton ondulé
Chain	Chaine
Chains, anti-skid	Chaines antidérapantes
Chisel, cold	Ciseau à froid
Clean, to	Nettoyer
Clutch	Embrayage
Cots	Couchettes
Crank (for starting motor)	Manivelle
Chain hooks	Crochet pour chaines
Cushion	Coussin
Curtain, front	Rideau avant
Curtain, rear	Rideau arrière
Cable, 10m	Cable de 10 mètres
Carrier, gas drum	Support bidon d'essence
Cover, radiator	Protege radiateur
Drum, liter, 50	Bidon de 50 litres
Differential	Differentiel
Disassemble	Demonter
Driving	Arbe de commande
Extinguisher, fire	Extincteur
Frame-sub (under motor)	Faux chassis
Fascines	Fascines
File	Lime
Flange	Aile
Fly-wheel	Volant
Frame	Chassis
Frame, folding (for barbed wire)	Chevaux de frise
Funnel	Entonnoir
Gear, steering (hand wheel only)	Direction
Generator	Générateur
Gasoline	Essence
Grease	Graisse
Grind	Roder
Grating	Caillebottis
Gun oil	Seringe à huile
Hook, towing	Crochet remorque
Hood	Capote
Hammer	Marteau
Hangers, spring, in front	Mains
Indicator	Compteur kilométrique
Inspect	Verifier
Inventory	Livre inventaire
Iron, sheet	Tôle
Jack	Cric
Joint, universal	Cardan
Kerosene	Petrole
Lamps, front	Lanternes AV
Ladder	Echelle
Lath	Latte
Logs	Rondins
Light, tail	Lanternes AR
Map	Carte
Motor	Moteur
Nail	Clou
Nut	Ecrou
Oil	Huile
Overhauling	Revision
Paper, piece emery	Morceau toile d'emeri
Pickets, iron	Piquets de fer

English	*French*
Pail, canvas	Seau de toile
Pieces, cross	Bastings
Pickets, large wooden	Grands piquets en bois
Planks	Planches
Planks, small	Voliges
Pockets, for record book	Pochettes à livres
Pliers, universal	Pince universelle
Pliers	Pinces
Pass, road, red	Permis rouge
Plug, spark	Bougie
Repair	Reparer
Replace	Remplacer
Rims, steel (on wheels)	Jantes
Roller bearings, ball bearings	Roulements à rouleaux, à billes
Straps, rifle	Courroires mousquetons
Shelters, light	Abris, légères
Screw	Vis
Screw-driver	Tournevis
Shaft, driving (or connecting)	Arbres d'accouplement
Spark	Etincelle
Springs	Ressorts
Steel, rolled	Acler laminé
Straighten (rods, etc.)	Redresser
Sponge	Eponge
Tape, roll, tire	Rouleau de Chatterton
Thread	Filet
Tires	Bandages
Tire, casing	Enveloppe
Tires, solid	Bandages pleines
Tools	Outils
Tube	Chambre-à-air
Traffic, bar, front	Pare-choc AV
Triangle, mine	Triangle de mine
Valve	Soupape
Wrench, 25 m/m	Clef à molette 25 m/m
Wrench, 60 m/m	Clef à molette 60 m/m
Wire, barbed	Fil de fer barbelé
Wrench, spark plug	Clef à bougie
Wire, small roll, iron	Petit rouleaude fil de fer
Wheels	Roues
Wire	Fil de fer
Wrench, monkey	Clef, anglaise

RULES FOR CORRESPONDENCE

The following notes are given as a guide for the preparation of official communications. Each clerk and stenographer should be required to make a study of these notes and refer to them for all matter in question.

560. *GENERAL.*

(a) *Conservation of Stationery.*—In view of the general shortage of all kinds of stationery, and paper in particular, the preparation of all communications will be made with a view to the economical and moderate use of office materials.

(b) *Forms.*—The form illustrating the instructions herein, which will be found in the models, will be adhered to in the preparation of correspondence.

(c) *Carbon Copies.*—Two (2) carbon copies will be made of all communications, one to be retained in the office files, and one for transmission with correspondence.

(d) *Additional Sheets.*—Should one or more additional sheets be necessary for letters, indorsements, etc., sheets of the same size will be used.

(e) *Numbering of Pages.*—The pages, beginning with the first, will be numbered midway of the sheet, about one-half inch from the bottom.

(f) *Paragraphs.*—Paragraphs should be numbered serially, single spaced, with a double space between paragraphs. Each paragraph should deal with but one phase of the subject matter of the communication.

(g) *Enclosures.*—All enclosures should be numbered serially, on the backs thereof in the lower left-hand corner; i. e., "Encl. No. 1," etc. If enclosures are added by succeeding indorsements, they will be numbered in the same series as those of the original paper, but will be marked in such manner as will clearly identify them with such succeeding indorsement; i. e., "Encl. No. 2—2nd Ind.," etc. All enclosures will be noted on original, and carbon copies of communications to which they pertain. In the case of enclosures added by succeeding indorsements, notation will be made of such addition. If enclosures are withdrawn before retransmission, the following notation will be made at the foot of the indorsement:— "Enclosure No.————withdrawn."

(h) *Due Date.*—When a reply is required to correspondence, the officer dictating same will designate to the stenographer the date on which the reply is required. The stenographer will note same on correspondence as prescribed on Model A. The system to be used will be the number of the day in the year. Example:—If a reply is required July 30th, the Due Date will be 211, that being the 211th day of the year.

(i) *Arrangements of Correspondence.*—The uniform arrangement of signed correspondence is essential for their proper handling, and should be strictly adhered to. The following method of arrangement will be practiced:

For convenience in signing communications, the original first, then the carbon copy for initialing, will be placed on top of the papers to which they relate. When papers are ready to leave the office, the sheet bearing the signature to the latest communication will be placd on top, followed by No. 1 of the original correspondence, sheet No. 2, etc. These will be followed by enclosures, if any, in serial order and then by all carbon copies in numerical order.

(j) *Preparing for Signature.*—For simplicity, papers will be prepared for signature always in the same manner, whether the officer who usually signs them be present or not. That is, the usual name will be typewritten below the space for signature. If officer be present, he will write his signature above the typewritten name. If he be absent, or if for some other reason his deputy or subordinate is to act for him that officer will sign his name and rank above the typewritten signature of his superior, prefixing the latter by the word "for."

Subordinates will not imitate the signatures nor write out in longhand the names of superiors and then initial underneath, nor will they use such terms as "For and in the absence of," etc.

Where authority is so delegated (in matters of routine nature), subordinate officers may sign communications "By direction" or "By authority" of the officer in charge. (Model B.)

(k) *Miscellaneous.*—Letters of transmittal are not necessary for forwarding rolls, returns, estimates, requisitions, periodic reports, etc. Communications should not be addressed to an office, nor to any officer by name, but should be addressed to the title of the office he holds. When referring to indorsements by number, the number of the page will also be given; i. e., "5th Ind. Page 3."

The general rule to the effect that communications referred from subordinate officers to their superiors, or vice-versa, will pass through officers of intermediate command should be adhered to unless specific exceptions to this rule have been made.

Military curtness and brevity, even in telegrams, must not be carried to a point where such curtness and brevity approach discourtesy. For example, the word "please" can be used with great effect in nearly all instructions, telegraphic or otherwise, and relieves such instructions of a tinge of peremptoriness.

Attention is invited to the provisions of G. O. 64, G. H. Q., 1917, relating to the marking and handling of all "Confidential" or "Secret" communications. Care should be taken that these provisions are strictly complied with.

561. *LETTERS.*

(a) *Subject.*—The brief of a letter will contain a subject (see Model A and B), not exceeding ten (10) words, setting forth clearly and concisely the subject matter of the letter. Only one subject will be dealt with in each letter.

(b) *Initials.*—The initials of the dictating officer, followed by the initials of the typist, will be placed in the lower left-hand corner of the letter and carbon copies, on the same line with his signature.

562. *INDORSEMENTS.*

(a) Numbering.—All indorsements will be numbered and follow each other serially, with space of about one-half inch between.

(b) *Due Date.*—The due date will appear when required, on the first line of the heading, immediately to the left of the initials. (Model C.)

(c) *Initials.*—The initials of the dictating officer, followed by the initials of the typist, will be placed on the first line of the heading, at the extreme right-hand of the page.

(d) *Wrapper Indorsements.*—When wrapper indorsements are made, no attention will be given to the numbers of the preceding indorsements, but a new series will be started of the wrapper indorsements. Example: "1st Wrapper Ind.," etc. (Model D). These indorsements will only be used when it is not wished to have certain action appear as part of the original correspondence, such as source of information, etc.

(e) *Miscellaneous.*—No subject will appear on the face of an indorsement, but care must be taken to adhere to the subject matter of the original correspondence. There is sometimes a tendency to stray from the subject at hand.

MODEL "A"

AMERICAN EXPEDITIONARY FORCES

HEADQUARTERS M. T. O., INTERMEDIATE SECTION

20 July, 1918.
(D. D. 211)

File: 451.33.
From: M. T. O., Intermediate Section.
To: C. O., Motor Truck Co., 304.
Subject: Policy of paying for Motor Transportation.

1. X X X X X X X X

ABC/XYZ

A.....X.....
Major, M. T. C.

2 Incls.

MODEL "B"

AMERICAN EXPEDITIONARY FORCES
HEADQUARTERS M. T. O., BASE SECTION NO. 7

20 July, 1918.

File: 451.33.
From: M. T. O., Base Section NO. 7.
To: C. O., 499th Engineers, A. P. O. 705.
Subject: Supply of Spare Parts.

1. X X X X X X X X

By authority of the D. M. T. C.

A/XYZ
2 Incls. (1 in Dupl.)

A.....B.....
Captain, M. T. C.

.....

MODEL "C"

451.33 4th Ind. (D. D. 221) ABC/LHQ

Hq. M. T. O., Advance Section, 20th July, 1918. To C. O., Advance Supply Depot.

1. Payment for motor transportation, as a matter of policy, should X X X

C.....D.....
Lieut.-Colonel, M. T. C.

2 Incls.
(Incl. No. 3 withdrawn.)

.....

MODEL "D"

451.33 1st Wrapper Ind. ABC/XYZ

Hq. S. O. S., O. D. M. T. C., 20th July, 1918. To: C. O., M. T. C., Reception Park, A. P. O. 799.

1. Forward for checking and return through this office.

By direction of the D. M. T. C.

A.....B. C.....
Captain, M. T. C.

9 Incls.
(1 in dupl.)
(4 in trip.)

.....

FORM FOR COMPANY ORDER

134th Motor Truck Train
50th Motor Truck Co.

Order No.....

Date:

1. Mechanic John A. Jones is relieved as mechanic and returned to duty as Private 1st Class.

2. Pvt. 1st Class Henry Smith is appointed mechanic vice Jones, returned.

Richard Dow,
1st Lieut. M. T. C.

RD/ABC

CARE AND UPKEEP OF STORAGE BATTERIES

564. The following should be observed in the care and upkeep of storage batteries:

1. Be sure battery is securely fastened in place.
2. Keep battery and interior of compartment clean and dry.
3. Keep water ½" above top of plates. In case distilled water cannot be procured, rain water is the best substitute.
4. The best way to ascertain the condition of a battery is to test the specific gravity (density) of the solution in each cell with a hydrometer.
5. When all cells are in good order, the gravity will test about the same (within 20 pts.) in all. Gravity above 1.215 indicates battery more than half charged; less than 1.215 and above 1.150 indicates less than half charged; below 1.150 indicates run down condition and battery should at once be charged.
6. Gravity in one cell markedly lower than in the others indicates the cell is not in good order. If there is no leak, look for short circuit in the cell.
7. A battery charge is complete when, with charging current flowing at the finish rate, all cells are gassing (bubbling) freely and evenly and the gravity of all cells has shown no further rise during one hour. The gravity reading should be between 1.280 and 1.300.
8. Keep battery fully charged during cold weather. A fully charged battery will not freeze in temperatures ordinarily encountered in France.

APPLICATION, REMOVAL AND CARE OF TIRE EQUIPMENT

564. The following rules must be followed in order to obtain the maximum mileage:

SOLID DEMOUNTABLE TIRES

565. Solid tires are not to be considered unserviceable or removed until tread is worn to within ½" of base.

566. Solid demountable tires are applied by two methods:

(a) The wedge principle, in which the tire is tightened on the wheel by a wedge ring forcing the tire away from the wheel. This method is used by Firestone, Goodyear, Gibney and United States.

(b) The reverse of the wedge principle, in which the tire is drawn to the wheel instead of being forced away. This method is used by Goodrich.

567. When stop plates are employed they should be attached to the permanent steel felloes by drilling and tapping the band, using the proper set screws which are furnished with the equipment. In applying the stop plate or key be careful to set in perfectly square across the face of the felloe band.

568. The wheel and tire base should be cleaned before applying, after which the angle clamps or clamping flanges may be set into position on inside of the wheel. Then slip on the wedge ring. Where angle clamps are being used no inner wedge is necessary. Place tire upon wheel, then wedge ring and outside clamping flange.

569. In the application of dual tires, the center band is placed in position, after which the outside tire is placed, then the wedge ring and clamping flange.

570. In drawing up the bolts commence with those on either side of stop plate and then proceed clockwise around the tire, drawing the tires gradually to the center ring with uniform contact, which will insure proper centering of the tire on the wheel.

571. In removing a solid demountable tire it is sometimes necessary to use the sledge, in which case care should be exerted not to injure the steel equipment.

572. Where the pressed on tire is used, application and removal is made with the hydraulic press.

SOLID TIRES IN SERVICE

573. Those responsible for the trimming of solid tires should exert the greatest vigilance in seeing that all tires are properly trimmed before trucks are allowed to go into service. Trimming knives may be secured for this purpose.

574. When one tire on a dual equipment becomes unserviceable, while the other is only partly worn, the partly worn tire should not be discarded, but matched up with a tire showing the same amount of wear and put back on the wheel for further service.

575. A new tire shall never be used on the same wheel with a tire partly worn. Place new tires on front wheels when possible, provided the worn front tire can be mated with partly worn rear for dual service.

576. Drivers will take pains to avoid obstacles in the road and run at low speed over rough places. The maximum speed for a solid tire is 15 miles an hour. Do not exceed this limit. Never exceed 8 miles an hour in rounding curves.

577. Do not carry loads beyond the prescribed carrying capacity. One overload on tire equipment is sufficient to cause a breakdown of the tires and results in their early failure.

578. Sudden starts and stops have a very serious effect on solid tires. Always let the clutch in slowly and apply brake gradually.

579. Avoid car tracks. Running in car tracks causes tires to break down early.

580. When it is necessary to use skid chains apply them loosely. Never use skid chains when not actually necessary.

581. Tires showing unusual wear indicate improperly aligned wheels. The wheels of such tires must be properly aligned immediately.

582. Equalization of brakes is very important. Drivers should report a tendency of the brake to hold on one wheel and slip on the other.

PNEUMATIC TIRES IN SERVICE

583. Pneumatic tires are of three types:

Straight Side Clincher and Quick Detachable. The Q. D. has the same style of bead as the Clincher but is non-extensible, whereas the Clincher has a flexible bead, making it possible to stretch over the rim.

584. Before applying tires, rims should be carefully examined for rough spots, projecting pieces of metal and so forth, which can be removed by filing or emery cloth. All rims should occasionally be given a coat of graphite to prevent rust and to facilitate removal and application of tires.

585. Before applying tires to rims, sprinkle the casing liberally with soapstone and insert the tube carefully to prevent any twisting or folding. Never apply a tire to a rim without being sure it is perfectly true and free from dents or rough spots, for air to fill the tube out around and ensure all folds being eliminated. If there is a flap air to fill the tube out around and ensure all folds being eliminated. If there is a flan inside the tube casing, make sure that it is smoothly placed between the tube and beads of tire, otherwise a pinched tube may result in early blowout.

586. The tire is now ready for application to the rim. Insert the valve stem through the opening in the rim and see that it is perpendcular to the rim, otherwise tension may be placed on the tube and the valve torn loose.

587. As rims are of different construction the methods of tire application vary, but the general rule to see that all locking devices are properly and securely locked should be followed. Never force locking devices into place by hammering or prying, as these locking devices should lock readily and failure to do so is generally due to improper application. This is particularly true of locking rims on Goodrich, Firestone and Kelsey makes, to force which injures rims by warping and twisting. This prevents later proper application and even results in destruction.

588. In applying demountable rims to wheel, be certain that the rim seats and is properly aligned on the wheel band and the inner bevel of the felloe band. In drawing up the nuts which fasten the wedge clamps and hold the rim securely on the wheel, do not draw each nut up to its limit, but give each a few turns, proceeding clockwise around the wheel until all are uniformly tight. This will insure perfect centering of the rim on the wheel.

589. Upon application, tires should be inflated to the proper pressure indicated in the following table:

Size	Pounds per Sq. In. (Gauge Pressure)
3	45
3½	55
4	65
4½	75
5	80
5½	85
6	90

DO NOT GUESS AT PRESSURE. Always test with air gauge.

590. After proper pressure as indicated in the foregoing table has been obtained, the valve should be tested for any possible leak. If any leakage of air is discovered in this test, the valve inside should be tightened by means of the valve cap which is made for this purpose. Always apply the valve cap to the valve stem and further protect the valve stem by means of the dust cap.

591. In applying Clincher tires (the type used on Ford and all European cars) the greatest care should be exercised to insure that the tube is not pinched under the bead nor twisted when inserted into the casing.

592. If any air remains in the tube, it should be allowed to escape by removing the valve plunger from the valve stem. This can be done by unscrewing the valve plunger by means of the valve cap.

593. Be sure in all cases to remove dust cap and locking nuts from valve before attempting to remove tire from the rim. Remove rim from the wheel by unfastening clamps, unlocking devices and tire will be readily removable.

594. Some tires may stick to rim, due to rusting and in such cases patience is required to remove properly. Never try to pry tire beads from rim with sharp sided or pointed tools, as injury to both casing and tube will likely result.

CARE OF TIRES

595. The following general rules for the care of tires should be followed:

(a) See that pneumatic tires are always inflated to the proper pressures (see table in Par. 589). THIS IS OF FIRST IMPORTANCE.

(b) Never operate tires flat. Remember that whenever a tire is run flat the tube is being ruined as well as the casing. Failure to observe this rule will result in separated fabric, broken beads and destroyed tubes and makes repair practically impossible.

(c) Do not neglect tread cuts, for this permits dirt and moisture to reach fabric, causing tread and fabric to separate. Badly cut tires should be promptly removed and sent in for repair.

(d) Never use Clincher tires on straight sides or vice versa, except in case of absolute necessity. Abnormal strains are set up by this practice, resulting in early failure of tires at the bead which it is impossible to repair.

(e) See that wheels are properly aligned at all times. Good evidence of faulty alignment appears in tires which wear rapidly. When tires are noticed to wear rapidly, immediate attention should be given to alignment.

(f) When skid chains are used, see that they are applied loosely, permitting play enough to work round the tire and thus distribute the wear.

(g) Never permit oil and grease to remain on tires, as they destroy the life of the rubber.

(h) Never apply brakes suddenly, unless absolutely necessary, as all the strain is placed on the driving tires, resulting in scuffing and rapid wear.

(i) Start slowly by engaging the clutch gradually. Rapid starting has the same effect as rapid application of brakes.

(j) Inspect tires carefully from time to time, particularly after a trip over very rough, uneven roads at high speed. Look at the inside of casings for fabric breaks which are not noticeable from outside. When these breaks are found they should be repaired at once.

(k) Inspect tires each night and remove all nails or bits of metal which may have become embedded in the tread. If neglected, these foreign substances will work into the carcass, causing separation, puncture or blowout.

(l) Make frequent use of tire gauge to maintain proper air pressure.

(m) In making changes of flat tires, never insert tube until the casing has been examined and the cause of failure determined and removed.

596. In general, the same rules which apply to pneumatic tires are applicable to solid tires, particularly Paragraphs f, g, h, i, and j above.

597. Summarizing, practices which are particularly damaging to tires, are:

(a) Sudden turning of corners.
(b) Running under-inflated.
(c) Sudden starting and stopping.
(d) Using bad rims.
(e) Neglecting repairs.
(f) Driving in car tracks.

(g) Allowing faulty alignment of wheels to continue.
(h) Permitting oil or grease on rubber.
(i) Using tight chains.
(j) Speeding over bad roads.

TIRES AND REPAIR MATERIAL IN STORAGE

598. General rules governing the care of stock:
(a) Store in dry, cool place away from light, if possible.
(b) Keep tire repair material suspended on roll.
(c) Keep number and date stock was received.
(d) Issue oldest stock first.
(e) Keep repair material away from heat, dirt, or soapstone.

AUTHORITY OF PARK COMMANDERS

599. Some interference with the authority of service park, overhaul park and reconstruction park commanders has been experienced from overzealous officers who demanded repairs beyond the scope of the park, or precedence of work which interfered with the operation of the park or which limited the time that a park should take for the work necessary to be performed.

600. Service Park commanders are generally under the M. T. O. of a Division, Corps, Army or S. O. S. Section. Overhaul Park commanders are under M. T. O. officers of S. O. S. sections unless specifically excepted. The reconstruction parks are under the Director of Motor Transport Corps. All park commanders are directed to issue instructions to all of their subordinates that they will not receive orders relative to the operation of their park from any source except through the commander. A Park commander will recognize orders received from his M. T. O. or on the authority of the Commanding General to whom his M. T. O. reports. All instructions from the Commanding General to whom his M. T. O. reports will, except in emergency, pass through his M. T. O. and must in all cases emanate from the Commanding General himself, his General Staff, or Adjutant General.

601. When oral orders are received from other sources purporting to be upon the authority of a proper general officer, as outlined above, which is not from an executive source and which may interfere with the proper exercise of the authority of the park commander or his immediate superiors, the officer giving such instructions will be shown a copy of these instructions and requested to have his orders transmitted through the usual channels, or to place them in writing over his own signature, quoting the authority on which he gives such orders.

602. It is the purpose of these instructions to make it clear that park commanders must avoid disputes, but they are entitled and have a right to ask that conflicting instructions be issued in writing or through the proper and usual channels.

603. Questions as to what repairs are necessary, what method shall be followed in repair, and the time required to make them are wholly within the province of the park commander. The relative expediency of different classes of work is subject for amicable adjustment, in which conflicting demands will ordinarily be settled by the park commander upon their merits.

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